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THE CYCLOPÆDIA
OF
POPULAR MEDICINE,
INTENDED FOR DOMESTIC USE;

WITH NUMEROUS ILLUSTRATIONS.

THIS WORK COMPRISES

AN ACCOUNT OF THE CAUSES, SYMPTOMS, AND METHODS OF
CURING DISEASES, TOGETHER WITH THE DISEASES
OF WOMEN AND CHILDREN, AND THOSE
INCIDENT TO WARM CLIMATES;

WITH A PLAIN DESCRIPTION OF
THE MEDICINES IN COMMON USE;

TO WHICH IS ADDED,

A COMPLETE TREATISE ON DIET, AND DIRECTIONS FOR THE
TREATMENT OF FRACTURES OF THE LIMBS,
ILLUSTRATED BY SEVERAL PLATES.

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DOSES OF MEDICINES.

The Doses of Medicines directed in this work, unless otherwise particularly mentioned, are intended for grown-up persons of moderate strength. The following table shows the proportions in which the doses should be diminished during the earlier periods of life.

Suppose the dose for a person
of middle age to be . . . one, or one drachm.

| | |
|------------------------------|--------------------------------|
| For one from 14 to 21 years, | |
| it will be | two-thirds, or two scruples. |
| 7 to 14 . . . | one-half, or half a drachm. |
| 4 to 7 . . . | one-third, or one scruple. |
| Of 4 years of age, | one-fourth, or fifteen grains. |
| 3 | one-sixth, or half a scruple. |
| 2 | one-eighth, or eight grains. |
| 1 | one-twelfth, or five grains. |

A teaspoonful (sixty drops) is considered equal to a drachm, and a table spoonful to half an ounce: but the propriety of accurately weighing or measuring the doses of medicines must be obvious to every one; every medicine chest should be furnished with a set of apothecaries' weights, a graduated measure for drops (*minims*), for drachms, and for ounces.

P R E F A C E.

At the present day it were altogether superfluous to prove that the Public should possess some knowledge of the nature and treatment of disease. Such knowledge is sometimes absolutely necessary. No one will contentedly linger under sickness without endeavouring to relieve it, because regular medical advice may not be at hand. To expect such a degree of self-denial on the part of the invalid were vain and ridiculous. A man will plead his own cause before a court of justice, sooner than be hanged without benefit of counsel ; he will become his own religious instructor, sooner than die without benefit of clergy ; and, in like manner, it behoves him to apply whatever medical knowledge he may possess to the alleviation of his own or his neighbour's bodily suffering, in all cases where no better assistance may be obtained. "A little knowledge," it is said, "is a dangerous thing ;" but a little knowledge is better than no knowledge, and where we have so powerful a handmaiden as Nature to assist us, a very slight degree of science will often suffice to conduct our work of benevolence and usefulness to a happy termination.

The advantages of some acquaintance with the science of medicine are not less apparent than its necessity. Almost every other branch of natural science has been

rendered popular, by the diffusion of works addressed to the understandings, or suited to the capacities, of the Public. The study of law and divinity forms part of the education of every gentleman in our Universities. The sublime truths of astronomy—the most hidden operations of nature—the history of our globe—the abstruse and speculative disquisitions on the human mind—these, and an infinity of other subjects, are treated in popular writings, and brought home to the minds of the most humble; but the Public know nothing of that wonderful machine “in which we live, and move, and have our being;” they are unacquainted with the laws which preserve it in a state of integrity, and are therefore unable to avoid or ward off disease; they are still more ignorant of the manner in which the machine may be repaired when injured; medicine is, therefore, to them a mystery, and the book of health a sealed volume. Surely such an omission as this should not be encouraged; it is disgraceful to the system of education pursued in this country; it is highly injurious to the Public, and fraught with no advantage whatever to the regularly-educated medical man.

Impressed with these ideas, the Author of the present work has not hesitated to enter the field as a writer on Popular Medicine. To defend his conduct in this respect he thinks completely unnecessary. The practice is sanctioned by common sense, and by the authority of some of the most distinguished ornaments of the medical profession. A few words of explanation, however, are required, to point out the design of the work, and certain features which, it is hoped, distinguish it favourably from other productions of a similar kind.

The object of the Cyclopædia of Popular Medicine is indicated on its title-page—to describe in plain and simple terms the causes, symptoms, and treatment of disease. The whole science of medicine rests on these three points : we ascertain causes for the purpose of avoiding, symptoms for the purpose of distinguishing, and treatment for the purpose of curing, disease.

In a great many affections, and particularly in disorders which depend on derangement of the functions of a part, common sense, aided by the rules which are to be found in the present pages, will enable the Reader to recognise the symptoms, and select the proper treatment. Still I can not sufficiently impress on his mind the necessity of having at once recourse to medical assistance, whenever it can be obtained, in all serious cases of disease. The Cyclopædia of Popular Medicine is not intended to supersede the practice of medicine, by making every man his own doctor, but to afford simple rules for the alleviation of disease and the preservation of health, which may be had recourse to whenever circumstances render it expedient or necessary. It is hoped that the rules herein laid down are expressed in a manner to be intelligible to all persons who have received any education. This has been the main object of the Author, and in this, he trusts, he has succeeded. In recommending any particular line of treatment, the Author has availed himself of the best medical authorities, confirmed by his own experience and the results of a long practice, both in the West Indies and different parts of Europe.

On the subject of Diet particular attention has been bestowed If the prevention of disease be better than

the cure, we cannot, surely, be too careful in a matter which is so intimately connected with our bodily welfare, and a neglect of which is almost constantly followed by discomfort, if not by disease.

Finally, the Author has thought it advisable to introduce an article especially devoted to Fractures of the Limbs. The symptoms of Fracture are generally recognised with facility; the treatment being, for the most part mechanical, is easily applied; hence the article on Fractures, illustrated by numerous drawings from the pencil of Mr. Maclise, will, it is believed, be found useful to captains of ships, persons residing in rural or remote districts, and on various occasions where surgical assistance could not be obtained.

Manchester, January, 1842.

CYCLOPÆDIA
OF
POPULAR MEDICINE.

ABSCESS.

By the term Abscess is meant a collection of matter, or *pus*, in some part or organ of the body, invariably caused by previous inflammation. Abscesses are generally situated in the cellular structure or tissue, and they form more frequently in that structure near the surface, than where it is deep-seated; the same structure or tissue also enters into the formation of all the internal organs liable to abscess.

An abscess is either *acute* or *chronic*.

ACUTE ABSCESS. When acute inflammation is about to terminate in abscess, the pain which was previously sharp becomes dull, the swelling is increased, and throbbing of the part commences. When the matter is completely formed, the part becomes softer, with an uneasy feeling of weight, the throbbing ceases, and if the matter be not too deeply seated, we may feel it fluctuating by pressing with the fingers. At the same time the feverish symptoms which existed during the inflammatory stage give way, the pulse becomes less frequent, soft, and undulating, and rigors or shiverings take place at intervals; they are felt principally in the back and loins. The tumour at length begins *to point* at or near the middle of its surface, the skin at this part gradually becoming thinner, ultimately gives way, and the matter is freely discharged.

CHRONIC ABSCESS. Chronic abscess is frequently situated in the lymphatic glands, as well as in the cellular tissue; it forms slowly, in consequence of the previous inflammation having been slight and long continued. Individuals of weak or scrofulous habit of body are most liable to this description of abscess. The

tumour is round, without redness or heat of skin, and does not offer much resistance when pressed upon ; the pain, if any exist, is comparatively slight, but there is an uneasy sensation of tension and weight. After remaining a longer or shorter period in this state, the pain becomes a little increased, a slight degree of redness may be observed on the tumour, and softening commences at its centre, gradually extending throughout ; the inflammation then goes on until the skin bursts and allows the matter to be expelled.

The matter of acute abscess is a bland fluid, thick, white, and without smell : this is called *healthy pus* ; but sometimes when long confined it becomes thin, fetid, and acquires a grayish colour. In chronic abscesses the matter varies in consistence ; it is generally serous, containing little flaky or curdy masses, which have in some cases the consistence of cheese, and the smell is disagreeable ; this in contradistinction to the former is called *unhealthy pus*.

TREATMENT. Acute Abscess. When inflammation of a part is going on, threatening abscess, our object must be to prevent this termination, if possible. But if suppuration cannot be prevented by the usual means, viz., low diet, keeping the bowels freely open, the liberal use of leeches, and the constant application of cold lotions to the part, such as *Goulard-water*, vinegar and water, &c., recourse should then be had to the soothing treatment, which consists of warm applications, as fomentations of marsh-mallow and large poultices of bread and milk, or linseed ; these are to be changed frequently, so as to keep up a due degree of heat and moisture, all stimulating applications being carefully avoided. Internally the following mixture, recommended by Sir Astley Cooper, should be administered :—

No. 1.

Liquor of the acetate of ammonia, six ounces,
Epsom salts, one ounce,
Laudanum, sixty drops. Mix.

The dose of this mixture is three or four tablespoonfuls three times a day. Half a grain of *acetate of morphia* may be substituted for the laudanum.

When the abscess has gone through its stages regularly and

begins to *point*, it should be left to burst of itself; but if the matter be confined under the *fascia* or membrane which envelopes the muscles, or if the skin be very thick and unyielding, it will be necessary to make a free opening with the lancet.

Chronic Abscess. The treatment of chronic abscess is very different from that of acute. In this case the diet must be generous, and tonic medicine should be administered to give strength to the constitution.

No. 2.

Sulphate of quinine, forty grains,

Extract of gentian, a sufficient quantity to form a mass to be divided into twenty pills. One to be taken twice or three times a day.

Cold stimulating poultices should be applied over the part: the one generally used is made by dissolving a tablespoonful of common salt in a pint of water, and mixing it with oatmeal or flour. If the case be very tedious, a *compound galbanum plaster* may be applied. This form of abscess will also require the lancet if the matter be deeply seated, or under the muscular covering, so as to prevent its spreading among the muscles; and as a general rule all abscesses, whether acute or chronic, situated in the arm pit, near the anus, in the groin or neck, should be opened early, in order to prevent the matter accumulating and extending in the cellular tissue. When it is found necessary to use the lancet, a free opening should be made in the most depending part of the abscess, and a piece of lint smeared with olive oil or spermaceti ointment placed in the wound, to prevent its closing before the cavity has healed up from the bottom.

If the abscess has been extensive, a roller or bandage should be applied, so as to bring the sides of the cavity together without covering the mouth of the wound. Whether the matter has been discharged through an opening made by the lancet, or from the spontaneous bursting of the abscess, it will be necessary to continue the poultices for some time after.

It is much to be regretted that more attention is not paid to prevent the disagreeable-looking scars occasioned by scrofulous abscesses, which we so often see in the necks of females, particularly when we know that these blotches are almost invariably the result of neglect or improper treatment.

In people of scrofulous constitution, the absorbent glands of

the neck not unfrequently become enlarged and hard without being discoloured or painful, though there is generally tenderness on pressure. These glandular swellings, for the most part, come on slowly, remain for a considerable length of time, perhaps weeks or months, and occasionally disappear of themselves without any treatment. But in general, after they have continued for some time in this indolent state, matter begins to form, the skin over the enlarged gland acquires a reddish tint, and there is pain either more or less severe. Warm poultices, and sometimes stimulating applications, are then made use of by those who are ignorant of the means which ought to be adopted in such cases; after a time the skin assumes a livid or purplish colour, and at last bursts and the matter is discharged. A considerable portion of the dark-coloured skin is lost by sloughing, and an ugly ulcer forms, which is healed with difficulty, leaving an indelible scar which remains for life. In a boy a scar in the neck is kept out of sight, being covered by the dress, and is, therefore, of no great consequence; but to a girl it is of the utmost importance, for when arrived at womanhood it must be a source of deep regret to bear scars not only offensive to the sight, but which point her out as tainted with scrofula, or *king's evil*, a disease that has always been considered as more decidedly hereditary than perhaps any other. As soon as these glandular swellings make their appearance on the necks of children, we should, if possible, prevent their suppurating; to effect this, gentle, alternative doses of *calomel* and *rhubarb* should be given, proportioned to the age of the child.

No. 3.

Calomel, one or two grains,
Rhubarb, five to ten grains. Mix.

This dose may be given every second or third day, or in smaller doses repeated at shorter intervals, and the part should be kept cool by the constant application of the following lotion:—

Goulard's extract (liquor of the acetate of lead) two drachms,
Spirit of wine, two drachms,
Water, two pounds. The two first ingredients are to be mixed before the water is added.

But it often happens after the greatest care and the utmost

attention in conducting the treatment, that the suppurative process commences and matter forms; as soon as this is ascertained the powders prescribed above must be discontinued, and the following medicine given:—

No. 4.

Dried subcarbonate of soda, four to eight grains,
Sulphate of quinine, a quarter of a grain,
Rhubarb, two or three grains. Mix. To be continued daily. Or,
Myrrh in powder, three to six grains,
Carbonate (or rust) of iron, the same quantity,
Rhubarb, two or three grains. Mix. To be given twice a day.

Food difficult of digestion, or of a stimulating quality, should not be given, but the diet should be sufficiently nutritious, and not confined to vegetable or farinaceous substances. When a slight blush or degree of redness is observed on the skin covering the part, and when matter can be distinctly felt on pressing with the fingers, vent should be immediately given to it. The opening should be made transversely with a lancet, or a fine double-edged knife, and the greatest care must be taken to squeeze out all the peculiar curdy matter which these abscesses almost invariably contain. By making the wound transversely, it follows the course of the folds or creases of the neck, or runs parallel with them, and consequently when healed the cicatrix will scarcely, if at all, be observed.

After the matter has been discharged, bread poultices mixed with either of the following cold lotions should be applied:—

No. 5.

Sulphate of zinc, twenty grains,
Water, ten ounces,
Spirit of wine, half an ounce. Mix. Or,
Nitric acid, twenty drops,
Distilled water or common water, a pint. Mix.

The strength of these lotions must be gradually increased, but not made so strong as to produce pain.

If the wound do not heal readily, which is sometimes the case, the best plan is to inject a little of the following lotion with a syringe every time it is dressed:—

No. 6.

Water, a pint,
Sulphate of zinc, twenty to twenty-five grains. Mix.

Any other gently stimulating lotion will answer the same purpose.

The time to make the opening, as has been already stated, is when the matter can be felt on pressure with the fingers ; the skin covering the tumour will then in all probability have a slight appearance of redness ; but if this stage of the abscess has not been taken advantage of, and suppuration has been allowed to go on until the skin has acquired a livid or purple colour, the use of the knife will then do no good ; it will be better to apply fomentations and warm poultices until the abscess burst of itself.

The time required for the formation of an abscess varies according to its situation and the constitution of the patient. Matter generally begins to form from seven to fourteen days after the commencement of inflammation, and an acute abscess usually runs its course in about three weeks. A lumbar or psoas abscess, or any other extensive chronic abscess, requires a much longer period, sometimes several months.

ACONITE, (WOLFSBANE OR MONKSHOOD.)

This plant has been used in medicine for many years, in Germany and Italy, and though long undeservedly neglected in this country, its virtues now begin to be duly appreciated. The dose of the extract of Aconite is two grains to six, three times a-day, and when found necessary to give it during any length of time, the dose may be increased to eight or ten grains three times a-day. Though there can be no doubt of the propriety of commencing with small doses in administering narcotic remedies, still the dose of Aconite directed in our pharmacopœias is too small, and it appears probable that the prejudice against this valuable remedy has arisen, in a great measure, from its not having been given in sufficient quantity. The extract, which is the only preparation of Aconite used in England, is a powerful remedy in all the stages of rheumatism, and in gout. It soothes the excruciating pain arising from cancer and diseases of the womb, when the extract of hemlock ceases to produce that effect. It is of the greatest service in tic-douloureux, scrofulous swellings, old syphilitic diseases, long-continued cough, and affections of the stomach.

The symptoms which point out the extent beyond which

Aconite should not be carried, are a slight degree of uneasiness at stomach, with inclination to vomit, and occasional dimness of sight, which may be removed almost immediately by taking a little warm brandy and water.

The extract of Aconite found in the shops, is often almost inert in consequence of being kept until it has undergone decomposition. It is therefore useless to employ the medicine, unless we obtain it at some well-known chemist's.

ÆTHER.

Sulphuric Æther is principally used as a stimulant and cordial: it is very diffusible, and consequently quick in its action. The effects produced by it are very evanescent, the dose therefore requires to be frequently repeated or combined with laudanum. This remedy is found very useful in relieving vomiting arising from indigestion. It is given mixed with thirty or forty drops of laudanum, immediately before the cold stage of ague, with the intention of checking the attack.

Æther is used in nearly all spasmodic diseases, such as asthma, hysterics, hiccough, cramps, and other nervous affections. It is given sometimes as a cordial in low fevers, and also in malignant fevers with the intention of allaying spasmodic twitchings.

Applied externally, Æther stimulates and reddens the skin; it is used for this purpose in nervous headache, and in toothache, being applied to the cheek. To produce the effect of irritating the skin, the part to which it is applied must be kept covered, otherwise it evaporates so quickly as to cause extreme cold.

The dose is from half a teaspoonful to a teaspoonful in a little water, or in three or four ounces of camphorated mixture.

AFFECTION.

This term in medical language signifies any diseased state or action; hence we say an affection of the lungs, or a nervous affection.

AGUE, OR INTERMITTENT FEVER.

Ague is now in this country comparatively a rare disease, and is not therefore considered of the same importance as formerly, when it prevailed to a much greater extent. The attention now paid to cleanliness and proper ventilation in our large towns and cities, and the extended cultivation and draining

of the land in the agricultural districts, tend greatly to diminish its frequency, particularly in Lincolnshire, where it is still to be met with, as well as in Sussex, Kent, Norfolk, Hampshire, Wales, &c.

In our East and West India colonies, and in Canada, ague prevails to such an extent as to render it a most formidable disease. In those countries, from its long continuance, it frequently brings on visceral affections, difficult to eradicate, and which cause much suffering long after the ague itself has been got rid of.

Ague generally declares itself under three regular forms, namely, the *quotidian*, *tertian*, and *quartan*. In addition to these forms, authors generally describe several others, such as the double tertian, triple tertian, duplicated quartan, triple quartan, &c., distinctions which can be of no practical value. The same may be said of other divisions, as the autumnal when the ague commences in autumn, and vernal when in spring. It is also denominated inflammatory, malignant, &c., terms derived from the accompanying symptoms. It ought, however, to be kept in recollection, that in whatever manner the form of the ague may appear, its nature is still the same.

The *quotidian* form has an interval of twenty-four hours, and the fit usually commences in the morning. This type of ague is not so common as the other two, and occurs generally in spring.

The *tertian* has an interval of forty-eight hours, the fit occurring about noon. This is the most common form, and prevails also in spring.

The *quartan* has an interval of seventy-two hours, commencing in the afternoon. This form prevails in autumn, and is the most difficult to overcome.

It must not be supposed that these forms of ague commence invariably at certain periods of the day; they may commence at any hour; the periods we have mentioned, however, are the most usual.

Each paroxysm or fit of intermittent fever has three well-marked stages, a *cold*, a *hot*, and a *sweating stage*.

The *cold stage* is ushered in by the following train of symptoms:—languor, listlessness, general uneasiness, with depression of spirits, aversion to food, a feeling of soreness of the

back and extremities, resembling the sensation caused by over exercise. The face and extremities then become pale, and a cold sensation is felt in the back and loins, gradually extending over the whole body, until decided shivering takes place ; the lips and nails assume a livid hue, the teeth chatter, the skin presents the appearance of what is vulgarly called *goose's skin*, respiration becomes oppressed, the pulse is weak, the mouth and throat dry, all the secretions are diminished, and the patient sometimes vomits.

The *hot stage*. After a longer or shorter duration, the shaking gradually goes off, the heat of the body returning, until it goes far beyond the natural standard. The skin then becomes dry, the face flushed, the pulse full and hard, the tongue furred, and the breathing, which was considerably affected during the cold stage, becomes easier—there is great thirst, severe headache and restlessness; the urine, which in the first stage was pale, is now high-coloured, the sensibility, previously more obtuse than natural, is now increased, the eyes have a bright and glistening appearance, and sometimes delirium comes on.

The *sweating stage*. The hot stage having continued an indefinite time, a slight degree of moisture is at length observed on the forehead and neck ; this gradually extends to the trunk and extremities, and terminates in profuse perspiration, which relieves the patient from his suffering. He is left, it is true, with a feeling of fatigue ; but the appetite returns, all the secretions again become natural, and he is able to follow his usual occupation until the commencement of another fit.

The quotidian has the shortest cold stage, but the longest paroxysm or period required for the completion of the three stages ; the tertian has a long cold stage, but a short paroxysm ; and the quartan has the longest cold stage and the shortest paroxysm.

The usual duration of the quotidian paroxysm is from twelve to fifteen hours, of the tertian ten hours, and the quartan form commonly completes its stages in six or seven hours. These rules, however, admit of many exceptions.

When the disease is giving way, the fits become milder, and gradually later, until at length the ague is no longer felt ; but when it is increasing, the fits become more severe, and gradually return earlier, so that it is not unusual for the tertian form to

become quotidian, and the quotidian to assume the remittent type of fever.

CAUSES. The exciting or specific cause of ague, is undoubtedly *malaria*, or the exhalations from decaying vegetable matter; this was first distinctly pointed out about a hundred and twenty years ago by Lancisi, who had ample opportunity of observing this disease in Italy, where it was, and is still very common, improvements in the rural districts of that country not having kept pace with our own. In some parts of Italy, during the excessive heat of summer, the *malaria* becomes so noxious, that it causes ague of a pernicious or malignant character, quite unknown in England, the patients sometimes being carried off in the second or third fit. The most deleterious effects of *malaria*, whether derived from decaying vegetable matter or not, can only be manifested under a high temperature; it then acquires a virulence truly extraordinary. We have had cases under our observation, both in Italy and in the West Indies, where individuals after having been exposed to it, have been attacked suddenly with shivering, followed in a short time by stupor and stertorous breathing, with shrunk features, and the pulse scarcely perceptible; in some cases we have observed convulsions. At first sight, one would have supposed the patients had been struck with apoplexy, or had swallowed some strong narcotic poison.

In this country we are indebted to Dr. Cullen of Edinburgh for having shown the first or real cause of ague to be *malaria*, but it seems highly probable that this disease may be reproduced without it. Ague is certainly very apt to relapse, and slight causes, such as exposure to cold and moisture, errors in diet, certain winds, such as the north-east, &c., will bring it back after an absence of months, or even years. Individuals whose general health is not good, are more liable to be acted on by *malaria* than those in robust health. Poor diet, fatigue, debauchery, or any other debilitating cause, by enfeebling the powers of life, predispose the body strongly to ague, when exposed to the influence of *malaria*, inasmuch as they render the system less able to resist its pernicious effects.

The nature of *malaria* and the manner in which it acts on the system in producing ague, are quite unknown; the cause of its periodicity and of the various forms which it assumes, is equally

unknown. Many suppose that *malaria* acts first on the blood, and afterwards on the nervous system; but Dr. James Johnson, whose opinion on this subject ought to have weight, from his having observed the action of malaria in various climates, and other physicians are of opinion that it produces its greatest and first impression on the nervous system. Some authors have supposed that ague is contagious, but the facts brought forward in support of this opinion do not appear to be sufficiently conclusive, and as far as our own observation has gone, we have seen nothing to lead us to suppose it to be so under any circumstances.

TREATMENT. In the treatment of ague, we have two objects in view, the one to alleviate and shorten the fits, the other to prevent their return.

Treatment during the fit. In the *cold stage* it will readily occur to every one to cover the patient with blankets or other warm clothing, and to administer warm drinks. Wine and spirits in any form are to be avoided, because they are of little or no use in modifying or relieving this stage, and they certainly render the hot stage more severe, particularly if the ague be complicated with any affection of the stomach, liver, or spleen, and they are still more likely to be injurious when there is determination of blood to the head; this is beyond a doubt, and the patient's request therefore ought not to be complied with when he asks, which he is very likely to do, for hot negus, or hot spirits and water.

We have frequently given *laudanum* at the commencement of this stage, with the effect of shortening it and rendering the whole paroxysm milder, but the dose should be large, at least sixty drops mixed with a little warm water—for females or individuals of delicate constitution, a smaller dose, twenty, thirty, or forty drops will be sufficient, but it ought to be avoided altogether, if there be much congestion in the blood vessels of the head, or if the patient is aware that laudanum disagrees with him, in consequence of some peculiarity of his system.

Dr. Mackintosh introduced, a few years ago, the practice of *blood-letting* in the cold stage, but if this method of treatment were even judicious, it could only be made use of by a medical man, and being besides of doubtful efficacy, we see no occasion to mention it further.

Hot stage. In this stage neither blood-letting nor laudanum

should be had recourse to: the former is sometimes dangerous, and the latter is more likely to do harm than good. Sydenham, Boerhaave, and nearly all the best authors who have written on this disease, condemn blood-letting, with the exception of cases in which local inflammation is running high. An army surgeon communicated to us the case of an officer in one of our West India colonies, who was bled freely from the arm during the hot stage, by a young assistant surgeon, and death was the consequence within half an hour after. The quantity of bed clothes is to be diminished, and the patient should be allowed to drink freely of cold water or cold acidulated liquids, such as cream of tartar, or tamarind beverage, with the addition of twenty or thirty grains of purified nitre. The cream of tartar beverage is made in the following manner:—

No. 7.

To three pints of boiling water, add
Four ounces of refined sugar,
Half an ounce of cream of tartar, and
Three drachms of orange-peel, or an orange cut in slices.

Sweating stage. In this stage medicine is not requisite. We have merely to take care that the body is not chilled when the patient's clothes are being changed.

Treatment during the intermission. It is only during the intervals or periods between the fits, that we can expect to effect a cure. We then have recourse to *Peruvian bark (cinchona)* or its preparation, the *sulphate of quinine*, which are possessed of almost a specific property in preventing the return of the fits, and may be considered as our sheet anchor in all the forms of ague. The dose of bark in powder, is from a drachm to two drachms every three or four hours, so as to allow nearly two ounces to be taken during each intermission. We are fortunately, however, no longer under the necessity of giving this nauseous remedy, which frequently oppresses and irritates the stomach and bowels, since all its virtues, without any of its bad effects, are contained in the concentrated form of sulphate of quinine, which should be given in the following manner:—

No. 8.

Sulphate of quinine, twenty-four grains,
Extract of gentian, a sufficient quantity to make a mass to be formed into twelve pills.

One pill may be given three or four times a day, commencing immediately after the sweating stage, or two grains of quinine may be given in place of each pill, in a little port wine and water, care being taken to continue this medicine for some time after the disease appears cured. The power possessed by quinine in overcoming ague is truly extraordinary, and must ever be considered as one of the most curious facts in medicine. It does not however produce the desired effect in all cases, and when it fails we have reason to suspect that the ague is kept up by some organic derangement of the bowels, lungs, liver, spleen, &c. If there be disease of any organ, it is aggravated during the fit in consequence of the increased determination of blood to the part, causing congestion, and during the intermission the affected organ keeps up constantly a greater or less degree of irritation in the system, and thereby prevents the quinine acting as it otherwise would do.

When chronic inflammation or enlargement of the liver, spleen, or any other organ, can be distinctly traced, leeches should be repeatedly applied over the part affected, or a seton or blister may be placed in the same situation, and the blistered surface kept discharging for some time. In such cases, when quinine is obstinately resisted, the *arsenical solution*, or *Fowler's solution*, which is the most powerful antiperiodic remedy we possess, next to quinine, may be found of the greatest advantage. The dose to commence with should be as follows:—

No. 9.

Fowler's solution of arsenic, three drops,

Laudanum, eight or ten drops,

Water, an ounce. Mix. To be given every four or six hours, gradually increasing the dose of the solution to eight or ten drops, according as the stomach will bear it.

It should not be given before breakfast, or on an empty stomach. If carefully watched, there is no danger whatever in using the arsenical solution, and it frequently cures ague when quinine fails. If it produce griping of the bowels, or sickness at stomach, the dose should be diminished.

The bowels must never be allowed to remain constipated at any period of the disease; constipation will be prevented by giving occasionally two or three grains of *calomel*, with eight, ten,

or fifteen grains of *jalap*, *rhubarb*, or any other mild laxative which the patient may have been in the habit of taking. Purging to any extent is never necessary in ague—keeping the bowels gently open being quite sufficient.

A variety of medicines have been recommended as sovereign remedies in ague, and among the rest *cobweb* (if it may be called a medicine), and some authors gravely advise us to descend into cellars in search of the real black spider, whose web only it seems is possessed of virtue; but we are strongly inclined to think, if recourse be had to the cellar at all, that old port wine judiciously used during the intervals will be found more beneficial than cobweb; indeed, we are quite of Dr. Elliotson's opinion, that it has a tendency to check the ague, only from the feeling of disgust which it produces when mentioned immediately before the commencement of the fit. While we have in our possession such powerful remedial agents as bark, sulphate of quinine, the arsenical solution, and if at the patient's command, change of air, we can see no necessity for trusting to medicines, or other means of doubtful efficacy.

It is only during the intermission that food should be taken, and as ague is almost invariably attended with debility, the diet ought to be light, nourishing, and of sufficient quantity; but if there be a tendency to inflammation of any particular organ, the patient must confine himself to low diet.

Ague is not likely to be mistaken for any other disease, though hectic fever has sometimes been mistaken for a quotidian ague, and it may, therefore, be as well to point out the distinction between them. In hectic fever the pulse is almost invariably above the natural standard during the intermission; the fit commences late in the afternoon, and there is sometimes a less severe fit about noon; the rigors or shiverings are comparatively trifling, and the sweating copious; the skin is clear, and there is a peculiar circumscribed redness of the cheeks.

In a quotidian, on the contrary, the fit, as has been already mentioned, commences in the morning; the cold stage continues much longer, and the sweating is not so profuse; the face has a peculiar sallow appearance called aguish face, and the skin acquires a dirty hue very different from the clear skin of a hectic patient.—(See *Hectic Fever*.)

ALOES.

This medicine is an excellent purgative, and one of the most certain in its action we possess. It does not produce watery stools nor create wind in the bowels, rarely disagrees with the stomach, and when taken in small doses assists digestion. It is particularly useful in cases of habitual costiveness in connexion with indigestion, and answers well with hypochondriachal people and those of sedentary habits; it is also serviceable when the constitution is sluggish or scrofulous. Aloes when combined with myrrh and a preparation of iron, is beneficial in obstruction of the menses, and when given in conjunction with small doses of blue-pill has been found one of the best medicines in jaundice.

It acts principally on the lower intestines, and has a tendency to irritate them when given too frequently or in too large doses. Hence it ought not to be given to those who have piles, nor when there is inflammation of the bowels, and should be particularly avoided by females who are subject to immoderate flowing of the menses. It is improper when there is any disease of the womb, during pregnancy, and also during the period of the menstrual discharge. Aloes is usually given in the form of pills; the dose is from five to fifteen grains: it is, however, seldom taken alone. When intended to give tone to the digestive organs and also to open the bowels, the following form of combination recommended by Professor A. T. Thomson will be found one of the best:—

No. 10.

Take of myrrh, six drachms,
Subcarbonate of soda, three ounces,
Ammonia, four drachms and a half,
Extract of aloes, six drachms,
Sherry wine, twenty-four ounces. Macerate during seven days, and strain.

Two or three tablespoonfuls of this mixture to be taken twice a day in the same quantity of a solution of extract of liquorice (the common Spanish liquorice dissolved in warm water), which answers the purpose of concealing the taste of bitter medicines, better than anything else.

Aloes is the principal ingredient in many of the patent or quack purgative pills (see the Appendix), such as Anderson's, Morison's,

Hooper's, Dixon's antibilious pills, and several others of the same description.

ALTERATIVES.

This term is applied to medicines when given in small doses continued for some length of time, for the purpose of restoring the deranged functions of organs to a healthy state without producing purging, vomiting, or sweating. The blue pill, for example, is called an alterative, and is the one in most common use in doses of a grain, half a grain, or even less, twice a day.

ALUM.

This medicine was strongly recommended by Dr. Percival in cases of painter's colic, in doses of ten to twenty grains every fourth or fifth hour. It was formerly employed in internal bleeding and gleet, but is now very little used internally. It has been found useful in stopping the bleeding from leech bites in children by keeping a portion for some time applied to the parts, and may be used in the same way to stop the bleeding arising from the extraction of a tooth. It is serviceable as a wash in arresting bleeding from the nose. (See the article on that subject.) Alum, also, forms a very useful gargle in common sore throats.

In the following form it is found beneficial as an injection in the discharge called *the whites*.

No. 11.

Take of alum, a drachm,
Water, seven ounces. Mix.

It is often used as a lotion for the eyes, after the inflammatory stage of ophthalmia has been subdued.

No. 12.

Take of alum, ten grains to a scruple,
Rose water, six ounces. Mix.

AMAUROSIS, OR GUTTA SERENA.

By this term is meant a complete or partial loss of sight, resulting from an affection of the part or parts of the brain connected with the nerves of the eye, or from palsy or atrophy of the optic nerve and its expansion in the bottom of the eye, called the *retina*.

This disease may be easily known by the pupil being in general dilated and motionless, while the globe of the eye retains its transparency: there is also in most cases a slight appearance of squinting.

Amaurosis is rarely met with alone, being either complicated with or caused by some other disorder. It may commence suddenly, the patient being struck with blindness of one or both eyes, but in general it comes on gradually. It begins either in one eye, which is usually the case, or may attack both at once. It is sometimes intermittent, occurring at regular or irregular intervals.

The causes of Amaurosis are various and often very obscure; the principal are, exposure of the eyes to strong light, occupation in examining minute objects, the frequent use of a magnifying glass with the same eye, or any long-continued over exertion of the sight, hereditary disposition, fulness of blood in the vessels of the brain, blows on or near the eye, exposure to lightning, disorders of the digestive organs, excess in eating, drinking, and smoking, the influence of narcotic and other poisons, loss of blood, worms in the bowels, the suppression of periodical evacuations, and the sudden healing of old sores. Age and the colour of the eye must also be considered as predisposing causes, old people being most liable to Amaurosis, though it may be met with in the new-born infant, or at any period of life. With regard to the colour of the eyes, the distinguished German oculist Beer has observed that dark-eyed people are more subject to this disease than those with grey or blue eyes, in the proportion of twenty-five or thirty to one.

When Amaurosis is commencing, the patient fancies he sees a variety of minute objects intervening between his eyes and the object at which he is looking; they assume the appearance of insects' wings or little pieces of net-work or gauze, or present a circular or serpentine form, and are sometimes like bits of cobweb; he tries to get rid of them by rubbing his eyes, but in spite of all his efforts continues to see them moving rapidly before him in whatever direction he turns. Those symptoms go on increasing until at length the patient can see nothing but an obscure cloud or haze, with occasional flashes of light or other

luminous appearances. The patient at any period of the disease may be troubled with severe head-ache and giddiness, but no regular train of symptoms can be pointed out, since the disorder depends on so many different causes, several of which may be acting at the same time.

When Amaurosis arises from errors in diet, fulness of blood in the vessels of the brain, or any other temporary cause, it may go off in the course of a few hours, but in general the disease is of long duration, and not unfrequently continues throughout life. It will of course be looked on as more or less serious according to the cause, or the disease which accompanies it. If the individual be young and the Amaurosis has come on suddenly, the pupil not much dilated and remaining to a certain extent moveable, a cure may be effected; but if it has come on slowly, the patient being in advanced life, the pupil remaining immoveable and continuing either dilated or contracted, while the globe of the eye is either harder or softer than natural, the patient will have little or no chance of recovery.

TREATMENT. When we consider the variety of causes which give rise to Amaurosis, and the difficulty of ascertaining its real cause, and that no scientific or rational treatment can be adopted without our knowing where the immediate cause or seat of the disease exists, we need not be surprised that amaurotic patients are frequently subjected to empirical treatment when they fall into unskilful hands. The patient naturally expects something to be done towards his relief, and the practitioner, unwilling to confess his want of knowledge, has recourse to some means or other. The unfortunate patient swallows the draughts sent him, three or four times a day; he takes strychnine or other powerful remedies, and perhaps has a long blister applied over his spine, or he is subjected to often-repeated electric or galvanic shocks, or to any of the numerous empirical measures recommended for this disorder. The *quack*, for so he ought to be denominated who thus works as it were in the dark, tampering with the health and even endangering the lives of those placed under his charge, perhaps makes a *lucky hit* and recovers his patient; this is of course talked of in his neighbourhood; the fact reaches the ears of other amaurotic patients, who consult him, and out of many

cases he perhaps effects a few chance cures ; his fame increases ; he acquires a name, while many of the unfortunate patients, without having received the least benefit, but, on the contrary, having had their complaints aggravated and their constitutions impaired, console themselves with the belief that they have received the best advice, and that nothing more could have been done for them. This is but too often the case in other diseases, besides the one now under our notice.

In directing the treatment of Amaurosis, all that can reasonably be done is to give a few general rules for well-marked cases ; this disease being usually so complicated, that each case requires its own particular treatment.

If Amaurosis arise from determination of blood to the head, the vessels of the brain, particularly those connected with the optic apparatus being overcharged with blood, it will at once be obvious that local blood-letting by the application of leeches to the neck (along the course of the jugular veins), and to the temples, or cupping the nape of the neck are indicated ; and if the individual be of a plethoric or robust habit of body, he should be bled freely from the arm. The extent to which blood-letting should be carried must depend on the age and constitution of the patient, as well as on the urgency of the case. In ordinary cases, however, twelve or fifteen leeches will be sufficient, and when general blood-letting is required, fifteen or twenty ounces of blood may be drawn from the arm, the bleeding to be repeated if the congestion continue. Low diet must be strictly enjoined, and the patient should be directed to bathe his eyes frequently with cold water, and to use the shower bath, or sponge his head night and morning with cold water. To these means must be conjoined rest and purgative medicine to keep the bowels freely open, such as the *black draught* (see page 32), and afterwards one, two, or three pills of the *compound extract of colocynth* every other night at bed-time ; the greatest care must be taken to prevent the eyes being irritated by exposure to strong light.

If the above treatment fail, Lawrence, Middlemore, MacKenzie, and other oculists of experience, recommend a course of mercury.

No. 13.

Calomel, eighteen to twenty-four grains,

Opium, three grains,

Crumb of bread with mucilage, a sufficient quantity to form a mass to be divided into twelve pills.

One may be given every night at bed-time, or five grains of blue-pill every night, or night and morning; if the mercury act on the bowels, a quarter of a grain of *opium* should be added to each pill. The mouth must be kept slightly affected for at least a fortnight by the occasional use of the mercurial pills. It will also be advisable to place a *seton* or *issue* in the nape of the neck, or to rub in the *tartar emetic ointment* (see page 26) freely between the shoulders, or the frequent application of *blisters* to the nape of the neck or behind the ears, should be had recourse to.

When Amaurosis is caused by suppression of the menses, the treatment consists in the application of ten, twelve, or more leeches to the external parts of generation, with the hip bath as hot as it can be used, or the immersion of the feet in warm water, to which some powdered mustard has been added. Aloetic purges and preparations of iron are also useful. (See the article on suppression of the menstrual discharge.)

If the Amaurosis proceed from stoppage of an habitual discharge from piles, leeches should be applied round the anus, and the bowels kept freely open by the following pills:—

No. 14.

Aloes and extract of colocynth, of each two scruples,

Calomel, twelve grains,

Syrup, a sufficient quantity. Mix and form into twelve pills. One or two for a dose at bed-time.

Amaurosis, from slow inflammation of the optic nerve and *retina*, or other internal structure of the eye, often comes on gradually in individuals of enfeebled constitution, such as literary men and artisans, whose sight has been over exercised and their general health impaired in consequence of confinement in close rooms, and other habitual causes. In such cases a very active treatment should be avoided; a little blood may be taken occasionally from the head by leeches, or from the nape of the neck by cupping, and attention paid to keeping the bowels open

by small doses of castor oil, rhubarb and magnesia, or any other mild *laxative*. Mercury should be given in alterative doses—three grains of *Plummer's pill*, or the same quantity of *blue pill*, every second night at bed-time; or it may be necessary, according to the urgency of the symptoms or the strength of the patient, to administer one or other of these forms of mercury until the mouth become slightly affected.

Blisters are advisable in all cases where there is any chance of effecting a cure: they should be applied in succession behind the ears, on the nape of the neck, and on the forehead above the eyes. To these means must be added regular exercise in pure air, and nutritious diet, easy of digestion; the eyes should be allowed repose, the patient taking care not to fatigue or expose them to strong light.

After the above treatment *tonics* will often be found necessary. We possess many valuable vegetable medicines of this class, but the one best suited for all ordinary cases, being the most regular in its action, is the *sulphate of quinine*, in doses of a grain, two or three times a day, in the form of a pill, or mixed with a little wine. The *subcarbonate or rust of iron*, and the *tincture of steel*, are also excellent tonics, in doses of ten grains of the former, and ten drops of the latter three times a day.

In Amaurosis brought on from the healing of old ulcers, or the disappearance of an eruption, recourse should be had to *counter-irritation*, by means of setons or issues. Beer states that he succeeded in curing more than twenty patients in whom the Amaurosis had been induced in consequence of the healing of old sores, by the application of strong mustard cataplasms the size of the hand to the cicatrix, changing them daily until ulcers were again formed.

In Amaurosis from disorder of the digestive organs, Richter, Schmucker, and Scarpa, particularly the latter, advise the use of *emetics*; Beer, on the contrary, does not approve of them, and Mr. Travers, as good an authority as any, declares that he has given tartar emetic a fair trial in many cases, but never knew any decided benefit result from it; he recommends in preference a long-continued course of blue-pill, with mild saline purgatives and tonic bitters.

In Amaurosis from general nervous debility, direct debility

from the loss of blood, or any other cause which may destroy the function or produce palsy of the optic nerve and *retina*, and when no increased vascular or slow inflammatory action can be traced, a variety of exciting and stimulating means are resorted to; Scarpa, Ware, and Hey, of Leeds, recommended electricity; others, *strychnine* (the salt of *nux vomica*) and stimulating applications to the eyes and nostrils; this description of treatment, however, must be used with the greatest caution, and never without the best medical advice. With regard to *strychnine*, Mackenzie of Glasgow, one of the best oculists of the day, says that he has never observed any good effect produced by it. Stimulating vapours to the eyes several times a day, have been recommended to be used in the following manner:—A portion of *sulphuric æther* or strong *hartshorn* is to be poured into the palm of the hand and held under the eyes until it has evaporated, so as to produce a copious flow of tears. Mr. Ward recommends a powder composed of one grain of *turpeth-mineral*, mixed with twenty grains of the powder of liquorice root, a fourth part of which is to be snuffed up the nostrils two or three times a day. Mr. Travers is of opinion that these external applications are of no use.

The patient's general health must be improved by invigorating diet, with a glass or two of wine a day, or a little porter, assisted by regular exercise in healthy dry air, sea-bathing, and tonics; the light must be moderated by wearing flat green glasses, as recommended by Scarpa. Bathing the eyes frequently with cold water is also useful.

ANGINA PECTORIS, OR BREAST-PANG.

This is an intermittent affection, coming on in fits at irregular intervals, and is one of the most painful and most fatal of all diseases. The fit commences suddenly, and usually when the patient is walking, with a severe lancinating or stabbing pain, generally behind the lower part of the breast bone, extending in the direction of the left nipple. The constrictive suffocating sensation which accompanies the pain, compels the patient to stop, and in the course of a few minutes, if quiet be observed, the attack goes off. The first attacks are comparatively slight, and of short duration, no particular inconvenience being felt

when they are over; but after a time they become more severe, and continue much longer; the pain extending to the arm and even to the ends of the fingers, generally on the left side only, though sometimes it extends to both, accompanied with a feeling of numbness which prevents the use of the arm. Occasionally the neck, the left jaw, and even the ear, are affected, the speech being slightly impeded, and the anxiety and suffocating sensation are frequently so severe, that the patient dreads immediate death. When the disease has advanced to this extent, the fits last from half an hour to an hour and upwards. The respiration is usually very little affected, though it may be sometimes a little more frequent than natural. The pulse is in some cases natural; in others, quick, strong, irregular or intermitting. The face may be either pale or red; in all the cases we have seen it has been pale or with a sallow tinge. The skin may be hot, or covered with a cold clammy sweat.

After the termination of a severe attack, the patient experiences a feeling of fatigue and soreness of the parts affected, and the sensation of numbness frequently continues for a considerable length of time.

When the disease is once established, the fits are readily brought on by quick exercise, walking against a strong wind, climbing a hill, going up stairs, or in fact by any sudden movement or too active exercise; also by excess in eating or drinking, anxiety of mind, or by any sudden mental emotion, and when the disease is far advanced, sneezing, coughing, or public speaking may bring on a fit. We had a patient who died suddenly from this disease, at the age of forty-five, when speaking at a public meeting; he had laboured under Angina upwards of seven years. In such cases of sudden death, the cause is generally ascribed to apoplexy, by people who know nothing of this affection.

The real nature of Angina Pectoris is still by no means well understood, though it has been carefully observed by many physicians who have written excellent treatises on it. Writers generally suppose that it is caused by derangement of the functional nerves of the heart and lungs: but whatever may be the cause, we are certain of one thing, that in the majority of cases where it proves fatal, the heart is found softened and

diminished in bulk, or loaded with fat; or that there is ossification of the mouth of the aorta (or great arterial trunk of the body), of the valves of the heart, or of the coronary arteries (the vessels which nourish the heart); but whether or not these morbid states are the cause or effect of the Angina, is still uncertain. It is fortunately not a very common disease, though more prevalent in this country than in France, Italy, or Spain, which would lead us to suppose that our climate or manner of living may have some tendency to bring it on.

Angina is a disease of advanced life, seldom attacking individuals under forty or fifty years of age, and men are much more liable to it than women; in illustration of this Dr. John Forbes, who has written an able article on this disease, in the "Cyclopædia of Practical Medicine," gives the following statement of eighty-eight cases:—

A. Results relative to the sex of the patients.

| | | | | |
|--------------------------------|---|---|---|----|
| Total number of cases examined | . | . | . | 88 |
| Of these were, men | . | . | . | 80 |
| women | . | . | . | 8 |

B. Results relative to the age of patients.

| | | | | |
|--------------------------------------|---|---|---|----|
| Total number whose ages are recorded | . | . | . | 84 |
| Of these were, above fifty | . | . | . | 72 |
| under fifty | . | . | . | 12 |

c. Results relative to the event of the cases generally.

| | | | | |
|---|---|---|---|----|
| Total number of patients the event of whose cases is recorded | . | . | . | 64 |
| Of these there died (almost all suddenly) | . | . | . | 49 |
| Were relieved or recovered | . | . | . | 15 |

d. Results relative to the event of the cases as regards sex.

| | | | | |
|--|---|---|---|----|
| 1. Total number of fatal cases | . | . | . | 49 |
| Of these were, men | . | . | . | 47 |
| women | . | . | . | 2 |
| 2. Total number of cases cured or relieved | . | . | . | 15 |
| Of these were, men | . | . | . | 11 |
| women | . | . | . | 4 |

Angina Pectoris is a disease of so marked a character, that it can scarcely be mistaken for any other; the acute pain behind the breast bone, extending to the left arm, distinguishes it from asthma, which is the only disease at all resembling it.

Gout, rheumatism, and derangement of the digestive organs, frequently accompany Angina.

Treatment during the fit. When the nature of a disease is not well understood, and its cause uncertain, the treatment necessarily becomes uncertain also. This is well exemplified by the variety of medicines of opposite virtues recommended in Angina Pectoris. Blood-letting during the attack is strongly advocated by some, while others declare that they have found it pernicious. Stimulants and cordials are said to be the most efficacious remedies by one practitioner, while another vaunts the use of *prussic acid*, a powerful remedy of a directly opposite nature.

We have found the *tincture of henbane* answer better than anything else in doses of from two to four drachms, according to the urgency of the case, in combination with four to six ounces of peppermint water. Shortly after the exhibition of this mixture, the patient not unfrequently discharges a quantity of air from the stomach, which gives the greatest relief, if it do not terminate the fit entirely. In some cases half a grain to a grain of the *acetate of morphia* may be advantageously substituted for the tincture of henbane.

Blood-letting to the extent of from four to ten ounces has been known to mitigate and shorten the fit, when the patient is of a full or plethoric habit of body, but it should be used with the greatest caution, and never when the patient is pale or debilitated.

Brandy, æther, ammonia, and other strong stimulants, are more likely to do harm than good, since we know that Angina is so frequently complicated with disease of the heart.

The best writers on Angina condemn the use of purgatives and emetics, or at least consider them useless.

Treatment during the interval. Medicine during the intervals can do little good compared with the advantage to be derived from a strict attention to regimen and diet; the latter should be almost entirely vegetable or farinaceous; animal food, if used at all, must be taken very sparingly, and should be confined to a little chicken or mutton. Wine, malt liquors, strong tea and coffee, and in fact every thing tending to quicken the circulation, must be altogether abstained from (see the instructions with

respect to diet in the article on apoplexy). With regard to regimen, mental and bodily quietude becomes absolutely necessary; the patient should, if possible, reside in a sheltered situation, where the air is dry, and the ground sufficiently level to admit of gentle exercise, avoiding all the exciting causes already mentioned. Flannel should be worn next the skin, and the feet kept warm by woollen stockings.

Much benefit has been derived from *issues* and *setons*, applied to the left side of the chest, or to the inside of each thigh; or the *tartar emetic ointment*, composed as follows, may be rubbed in over the chest:—

No. 15.

Tartar emetic, a drachm and a half,

Lard, or spermaceti ointment, an ounce. To be well mixed together; about the size of a nutmeg to be rubbed in night and morning.

This ointment soon brings out a crop of large pustules, resembling small pox: they are sometimes attended by a good deal of pain and irritation, which can be easily relieved by applying warm bread and milk poultices. The learned Dr. Copland recommends a particular form of issue. He says, “The *form of issue* to which I allude, and for the knowledge of which I am indebted to my learned friend Dr. Hutchinson, is the bark of mezereon root, deprived of its external cuticle, and after having been soaked for some time in a little water, placed upon the surface of the part from which we wish to procure a discharge. This bark should be confined to its place by means of adhesive plaster, spread on paper of larger dimensions than the part covered by the mezereon bark. The bark may be renewed every night, until it procures a copious discharge. In some cases the effect is produced in a single night, or in twenty-four hours. When the discharge becomes copious, the bark may be renewed less frequently. The adhesive plaster serves both to keep the mezereon in its situation, and to retain the discharge, so as to prevent it from soiling the clothes. When it is abundant, the plaster may be renewed, and the secretion removed, as its occasional acrimony often tends to heighten and to extend the irritation. The advantages of this issue are, that the patient can manage it from the beginning with great ease,

and it may be readily increased to any extent, and the discharge augmented according to the exigencies of the case."

A variety of remedies have been recommended in the intervals, but general rules cannot be given for their administration, each case requiring its own particular treatment. There is no specific remedy; whatever medicine is given, must be directed to the affection with which the Angina may be complicated, whether disease of the heart or liver, indigestion, or nervous excitement; and reference must, therefore, be made to the parts of this work which treat on these diseases.

If the Angina be purely nervous, or even if it be complicated with disease of the heart, the *carbonate or rust of iron* may be found useful in doses of a scruple to a scruple and a half, with half a grain of *sulphate of quinine*, three times a day; or the *sulphate of zinc* (white vitriol) may be tried; the following form will be the most suitable :—

No. 16.

Sulphate of zinc, twelve grains,

Acetate of morphia, two or three grains,

Extract of gentian, a sufficient quantity to allow the whole to be formed into twelve pills. One to be taken night and morning.

When the Angina is associated with indigestion or functional derangement of the stomach, recourse should be had to the following pill :—

No. 17.

Extract of henbane, a grain and a half,

Sulphate of quinine, half a grain,

Rhubarb, a grain. Mix and form into a pill—three to be taken daily.

If the liver be affected, half a grain of blue-pill should be added to each.

The patient, however, ought to be made aware, that neither the above, nor any other remedies, however appropriately prescribed, can be of much use, if the exciting causes of the disease are not strictly avoided; and that the most powerful medicine will produce no good effect, without rigid attention to the proper regimen and diet already pointed out.

ANTIMONIAL WINE.

This preparation is now comparatively very little used. It possesses no advantage over a solution of tartar emetic made when required.

ANTISPASMODICS.

Medicines which allay spasms, or in other words, painful and involuntary contraction of the muscles, are called Antispasmodics. The principal remedies of this class are opium, æther, camphor, assafœtida, musk, and galbanum.

APOPLEXY.

Apoplexy is characterized by a sudden suspension, more or less complete, of the power of sense and motion, the organic functions of circulation and respiration continuing to be performed, though impaired to a certain extent.

This disease is caused by pressure on the brain from an effusion of blood, its symptoms varying according to the extent of the effusion. It will be best understood by dividing it into the three following forms :—

1. In the first form, the individual, without having shown any previous symptoms of illness, falls down suddenly in a profound state of stupor, and lies without the power of voluntary motion or sensation ; froth appears at the angles of the mouth, the face looks bloated, and is flushed or of a livid colour, the eyes are insensible to the light, and appear as if starting from their orbits, the pupils are dilated, the lips have a purplish appearance, and are pushed forward at each expiration, the breathing is laborious, attended with stertor or snoring, the power of swallowing is lost, the evacuations are passed involuntarily, the skin is hot, and the pulse full and hard. These are the usual symptoms, but sometimes the face is pale, the skin cold, the pulse weak and quick, and neither the urine nor faeces are voided involuntarily.

This form of Apoplexy is generally fatal in the course of a few hours, though life may be prolonged two or three days. The patient, it is true, sometimes recovers, but then we are certain that there has been no effusion of blood, and that the fit has been caused by congestion, or in other words, by too great a quantity of blood having been lodged in the vessels of the brain.

2. This form only differs from the last in a smaller quantity of blood being thrown loose on the brain, producing symptoms of a milder character. Whether there have been previous warning symptoms or not, the patient is struck with palsy or loss of motion on one side of the body, and becomes at the same time insensible to every thing going on around him; he lies in a state of stupor which is not so complete as in the last form, for, if roughly pinched, he will show that he feels pain by moving the arm or leg of the side not paralyzed, or if a strong light be placed opposite the eyes, the pupils will contract, one generally contracting more than the other, which indicates that one side of the brain is more affected than the other. If strong hartshorn be applied to the nostrils, the patient appears to suffer from the painful sensation produced by it. The mouth is drawn to the side not paralyzed, and it is a curious fact that the paralyzed side is almost always opposite to the side of the brain which contains the effused blood. Delirium only takes place after inflammation of the brain has commenced.

In many cases the symptoms become more severe, and the patient sinks; but if recovery follow, they gradually give way, and ultimately disappear entirely; in general, however, the palsy remains to a certain extent, and the intellectual powers continue either more or less enfeebled.

3. In the third form, a smaller quantity of blood is effused than in the two last divisions. The following are its most marked symptoms:—The patient becomes giddy, there is a sensation of numbness and weight of the arm, or arm and leg, of one side, the ideas become confused, and the articulation of words is indistinct; the patient also cannot easily lay hold of any minute object. These symptoms having continued a considerable length of time gradually yield, and the patient is restored to health.

These three forms, as we have already mentioned, arise from the same cause, namely, pressure on the brain produced by effused blood, whether from the rupture of blood-vessels or in any other manner, and it will at once be seen that they are by no means arbitrary divisions, inasmuch as they gradually merge into each other.

There is still a fourth division called *serous Apoplexy*, which is

of no practical use, since there are no decisive symptoms by which it can be distinguished from the sanguineous. Apoplexy with weak pulse and pale countenance, supposed to have been caused by the effusion of *serum* or the watery part of the blood, has been frequently proved after death, to have arisen from the effusion of blood, and not from serum, as had been anticipated. We know, however, that apoplexy is sometimes, though rarely, caused by an effusion of serum in dropsical subjects, or after a tedious convalescence when there is great general debility.

There are certain symptoms which sometimes give notice of the approach of Apoplexy, namely, giddiness, indistinct vision, with the appearance of motes or sparks before the eyes, buzzing or ringing in the ears, drowsiness, a sensation of fulness in the head, general headache, or a pain in some particular part of the head, inability to articulate distinctly or to walk firmly. But unfortunately in the majority of cases, people are struck with Apoplexy when enjoying, to all appearance, excellent health, and without having experienced any symptoms whatever, indicative of the approach of this dreadful disease.

CAUSES. Stature rather low, with a plethoric or full habit of body and short neck; certain diseases of the heart; hereditary disposition; excess in eating rich or highly-seasoned food; intemperance in drinking; violent mental emotion; suppression of the discharge from piles; the drying up too quickly of setons or issues, and in fact any cause tending to determine the blood too strongly to the head. Old age may also be considered as a predisposing cause, apoplexy being more common between sixty and seventy years of age, than at any other period of life. M. Rochoux, who has written an excellent work on Apoplexy, gives the following table of sixty-nine cases, showing the age most liable to it:—

| | Cases. | | Cases. |
|----------------------------------|--------|----------------------------------|--------|
| From 20 to 30 years of age . . . | 2 | From 60 to 70 years of age . . . | 24 |
| From 30 to 40 years of age . . . | 10 | From 70 to 80 years of age . . . | 12 |
| From 40 to 50 years of age . . . | 7 | From 80 to 90 years of age . . . | 1 |
| From 50 to 60 years of age . . . | 13 | | |

This disease may be mistaken for a *fainting fit*, though the distinction is sufficiently well marked. When a person faints, the face and lips lose their colour, and the skin becomes cold; in

Apoplexy on the contrary, the face is generally red and the skin hot ; in fainting, the pulse and respiration are almost suspended ; this is not the case in Apoplexy ; a fainting fit is but of short duration, and the individual on recovering does not experience pain.

Epilepsy, or the falling sickness, resembles Apoplexy, in so far as the individual in both cases falls down in a fit ; but in the former disease there are convulsions, the limbs are not paralysed but rigid, and the eyes are convulsed and look upwards ; these symptoms distinguish it sufficiently from Apoplexy. (See *Epilepsy*.)

Complete intoxication is distinguished from Apoplexy by the smell of the liquor which the individual has drunk, and by the weakness of the pulse.

TREATMENT. When a person falls down in a fit of Apoplexy, the first thing to be done is to expose the head and neck to the open air, the head and shoulders being considerably raised. Blood should be taken freely from the arm, and at least twenty leeches applied along the course of the jugular veins, at the angle of the jaws, and on the nape of the neck. No spirits or stimulating medicine should be given. The next thing to be done, after cutting the hair from the head, is to employ cold applications ; ice, if it can be had, should be pounded, put in a bladder, and placed on the head in the form of a cap, and kept there until it dissolve ; the bladder should then be removed, and the head exposed to the air during twenty minutes or half an hour, until it recover its warmth ; the bladder replenished with ice should then be again applied. This remedy should not be continued too long at a time ; it ought to be discontinued for some hours, and during the interval thin pieces of cloth dipped in vinegar and water, or in the spirit of wine lotion (composed of one ounce of spirit of wine to five ounces of water), should be applied. and if ice cannot be procured, the head must be kept constantly moist with these lotions. If after twenty or twenty-four hours from the first blood-letting the pulse be found still hard and vibrating, the vein should be again opened, and the blood allowed to flow until the pulse become softer. The patient must be kept perfectly quiet and allowed to remain in the position in which he was first placed, nothing stronger being given than

whey or barley water. If the bowels be constipated, the following clyster should be employed :—

No. 18.

Barley water, a pint,
Oil of turpentine, one table spoonful,
Castor oil, two table spoonfuls. Mix.

If not found sufficiently active, it should be repeated, with the addition of a table spoonful of Epsom, Glauber, or common salt, or the following injection, which is still more active, may be used :—

No. 19.

Croton oil, two drops,
Glauber or Epsom salts, an ounce,
Infusion of senna leaves, twelve ounces,
Castor oil, an ounce. Mix.

This is all that should be done during the first forty-eight hours ; after the expiration of that period, when the congestion and determination of blood to the head have been relieved, the following purgative powder should be administered :—

No. 20.

Calomel, five grains,
Aloes in powder, three grains,
Jalap, ten grains. Mixed with a little jelly or honey.

If this powder do not operate in the course of a few hours, it should be followed by an infusion of senna leaves :—

No. 21.

Senna leaves, two drachms, infused in
Warm water, five ounces.

Three ounces of this infusion to be given as a dose, and the rest if necessary in the course of an hour, or the draught called the *black-draught*, may be administered, which is composed of

No. 22.

An ounce and a half of infusion of senna leaves,
Three drachms of Epsom salts, and
One drachm of tincture of senna.

When there is much difficulty in swallowing, croton oil will be found an excellent purgative, in a dose of two or three drops placed on the tongue.

It ought to be observed that in the early stage of this disease, the most powerful purgatives are frequently very slow in their action, producing no effect for a considerable length of time after they have been taken; it therefore not unusually happens, that under the idea that the first doses have not been sufficiently active, purgatives are repeated at short intervals, until at length their action commences all at once, and to such an extent as to endanger life.

Vomiting determines the blood strongly to the head; emetics ought therefore to be avoided, and even if vomiting commence spontaneously, it should not be promoted by causing the patient to drink warm water.

Blistering the head or nape of the neck, setons, issues, and every thing which may act as a source of irritation, should be carefully avoided during the first days of the disease, though at a more advanced period they may be used with advantage.

The cases which do not admit of general blood-letting are comparatively rare, but when the face is pale, the pulse weak and small, and the whole body appears paralyzed, it would certainly be improper; but this state, even when we are aware that the patient has been previously much debilitated, ought not to prevent the application of leeches and ice, or evaporating lotions in the manner already directed. In such cases embrocations of warm turpentine, and mustard cataplasms applied to the legs or feet, will be found useful. The mustard cataplasm is made as follows—

No. 23.

Take mustard seed in powder, and
Linseed in powder, of each half a pound.

Hot vinegar, a sufficient quantity to give the consistence of a poultice.

The state of the bladder ought to be carefully observed; if the urine accumulates, and the patient has not the power of making water, it must be drawn off night and morning with the catheter.

The treatment hitherto has been intended to relieve the congestion in the vessels of the brain, and diminish the undue

determination of blood to the head, with the object of preventing an increased effusion in the brain, as well as to counteract the inflammation which might result from the portion of coagulated blood already there acting as a source of irritation. But we will now suppose the attack over and the patient recovering, though labouring under the usual consequence of Apoplexy, viz., *palsy*, either more or less complete, of one side of the body, caused, as has been already mentioned, by a clot of blood pressing on the opposite side of the brain. Our treatment therefore must, at this stage, be directed to the removal of the pressure, by adopting means to promote the absorption of the clot, and to prevent another attack of the disease, which, after all the care that can be taken, is very apt to recur.

The *regimen* and diet of the patient now require particular attention. Wine, and all kinds of distilled and fermented liquors, must be prohibited; also coffee, strong tea, smoking, or the use of tobacco in any form, and indeed, every thing stimulating. Animal food must be given up almost entirely, or, if taken at all, should be used in very small quantity. The diet must consist principally of vegetable or farinaceous substances; stale bread, biscuits, or toasted bread and milk, rice, arrow-root, sago, tapioca, &c.; ripe fruit, and fish, may be taken in moderate quantity, with the exception of salmon, or other fish difficult of digestion. Butter and cheese are not to be allowed, nor vegetables difficult of digestion, such as cabbages, cauliflowers, and beans; cucumbers, radishes, and all raw vegetables, are to be carefully shunned. The general rule is to eat moderately, and avoid food of a stimulating nature, or difficult of digestion; and as Apoplexy commonly occurs late in life, the patient must know pretty well the sort of food which agrees best with him.

The patient must keep his mind perfectly quiet, and be on his guard against any bodily or mental fatigue, and avoid going to theatres, or other places of public amusement. Benefit will be derived from caustic issues, or a seton in the nape of the neck; or a blister may be applied to the same part, and kept open for some length of time. Sponging the head night and morning with cold water, or the shower-bath, will in many cases be found highly advantageous.

The utmost attention must be paid to keep the bowels gently

open with mild laxatives, such as castor-oil, Henry's calcined magnesia, or three grains of blue-pill at bed-time, followed by a Seidlitz-powder or the black draught (see page 32) in the morning. Nothing tight should be worn round the neck, and if the patient be of a plethoric or full habit of body, blood-letting, or cupping the nape of the neck every spring and autumn, may be had recourse to with advantage. A sea voyage, travelling for amusement, or any mild exercise taken regularly, and in moderation, will be found beneficial.

If the individual be of a weak habit of body, or if his constitution has been injured by previous intemperance or disease, it may be found necessary to give some tonic medicine, such as *sulphate of quinine* a grain, or a grain and a half daily, or *tincture of steel*, eight or ten drops twice a day, in a little cold water.

When the patient is getting better, the redness of the eyes and the bloated and red appearance of the face disappear, the dull uneasy sensation felt in the head, and unwillingness to move about, diminish ; the sleep becomes less heavy and laborious, and the intellectual faculties recover by degrees. As the patient's condition improves, the power of sensation and motion gradually returns, the leg generally recovering before the arm.

AROMATIC CONFECTION.

This compound is prepared in the following manner :—"Take cinnamon and nutmegs, of each two ounces ; cloves, an ounce ; cardamom seeds, half an ounce ; saffron, two ounces ; prepared chalk, sixteen ounces ; sugar, two pounds. Rub the dry ingredients together to a very fine powder, and keep them in a close vessel ; and whenever the confection is to be used, add water gradually, and mix until they are thoroughly incorporated." The dose is twenty grains to a drachm. It assists the stomach in bearing carbonate of iron, and other medicines, when we are compelled to give them in large doses for any length of time, and is given with advantage along with the chalk mixture, to stop purging unconnected with inflammation. It is useful in aiding digestion, when there is a want of action in the digestive organs.

Aromatic Confection must be avoided when there is a tendency of blood to the head, and in all inflammatory complaints.

ARSENIC.

The ARSENICAL SOLUTION, which was brought into notice by Dr. Fowler, of Stafford, in 1786, and commonly called *Fowler's Solution*, is the only preparation of Arsenic used internally. It is seldom given until other medicines fail, and then, when conducted with due caution, is as safe as many other remedies in every-day use, such as prussic acid, morphine, strychnine, &c. It was formerly much used in Lincolnshire, in the treatment of ague, under the name of the *Tasteless Ague Drops*, and when the sulphate of quinine does not produce the desired effect, is still the most powerful remedy we possess in curing that disease. (See *Ague*.)

We have known this remedy to be of the greatest service in some cases of the remittent fever of warm climates, when no local inflammation could be discovered: and, indeed, in this, as well as in many other diseases of a periodic nature, such as periodic head-ache, rheumatic pains coming on at certain hours, and rheumatic affections of the eyes, it is a valuable medicine, and should never be lost sight of, when quinine and preparations of iron have been tried without success.

The arsenical solution has been used advantageously in many nervous affections, such as epilepsy, St. Vitus's dance, catalepsy (or trance), and *tic douloureux*. Good effects have resulted from its use in some diseases of the skin, also in cancer; and it is the most efficacious remedy in the treatment of elephantiasis (or *Barbadoes leg*.)

The dose of the arsenical solution is four to six drops, with six or eight drops of laudanum to each dose, twice a day. It should not be taken when the stomach is empty; the proper time is about half an hour after eating. When given in this manner, no bad effect will result; in larger doses (twelve or fifteen drops) it sometimes causes a little griping and sickness at the stomach, which may be removed by giving a small quantity of laudanum (fifteen or twenty drops). When these symptoms come on, they of course point out the necessity of diminishing the dose.

Arsenic has been used externally in cases of cancer, and inveterate ulcers, but in this manner is attended with considerable risk ; indeed, it has been known to find its way into the system by absorption, and cause death. It has been the means of curing many obstinate ulcers of the lips and face, but in some cases, when applied externally, has caused the most intolerable pain. We can only use this remedy with safety internally. Arsenic enters in the composition of several dangerous quack medicines. (See *Appendix*.)

ASSAFŒTIDA.

This medicine is principally used as an antispasmodic in doses of five grains to twenty. It is useful in allaying inordinate muscular action in asthma, hooping-cough, colic, and hysterical affections ; and is given to promote expectoration in long-continued coughs, particularly in those of old people with debilitated constitutions. When there is any inflammatory action going on, it ought not to be administered, on account of its stimulating and heating properties. In flatulent colic it is often of the greatest service when given as a clyster ; when used in this manner, a drachm to two drachms should be dissolved in a pint of warm milk, or linseed tea.

The action of the *Tincture of Assafœtida* is quicker than that of the gum, if given to the extent of a drachm to two drachms.

ASTHMA.

This disease is generally unaccompanied with fever, and is characterised by great difficulty in breathing, recurring in fits at irregular intervals, attended with a feeling of constriction in the chest, wheezing, and a difficult cough, terminating in expectoration.

The nature and seat of Asthma have given rise to much discussion, and many plausible theories have been formed on its immediate cause. Authors of eminence affirm that it is invariably caused by disease of the heart, lungs, or great blood-vessels, or by some affection of the brain and spinal marrow ; while others of equal note are convinced that in many cases it is

an essential disease, depending on no other. It would be out of place here to enter into any detail relative to the various opinions which have been broached, with regard to the immediate cause of this complaint; it will be sufficient to mention the opinion which prevails among the most distinguished medical men of the day who have written on it, which is, that the direct cause of Asthma, whatever may be the remote causes, or whatever disease may be associated with it, is always a spasmotic contraction of the muscles of the windpipe, or of the air-tubes, called *bronchi*, in which the windpipe terminates, and of the external muscles of respiration; the muscles of the *bronchi* below the main tube are the most common seat of the spasm.

There are certain symptoms which give notice of the approach of a fit of Asthma, particularly if the individual has been subject to it for some time; these premonitory symptoms are, a sensation of oppression and fulness at the pit of the stomach, eructation of air, head-ache, sickness, disturbed rest, and not unfrequently an increased flow of pale urine; they are, however, by no means regular, and in some cases are entirely wanting, the individual being attacked suddenly, without any previous notice.

The fits usually come on between eleven o'clock at night and two o'clock in the morning. The patient awakes suddenly with great difficulty of breathing, and a most distressing sensation of tightness and constriction about the chest, which compels him to sit up in bed; he raises his shoulders, throws back his head and elbows, and uses every means in his power to expand his chest; he breathes with a wheezing noise, which may be heard at some distance, and coughs occasionally, but with considerable difficulty; and, though he can scarcely speak, he requests the windows to be opened, that he may breathe fresh air. The face sometimes remains pale, but in general becomes red, or acquires a bloated appearance; the eyes also appear red and prominent, and the face and breast are covered with sweat. The pulse is quick, weak, and not unfrequently irregular or intermittent; the hands and feet are cold, and in some cases, when the fit is very severe, the patient vomits frothy, bilious-looking matter.

The fit having continued two or three hours, or even longer, terminates with cough and expectoration, either more or less

profuse, and the exhausted patient falls asleep. Another fit may come on the following night, and the patient may perhaps suffer in this manner during several nights in succession, or it may not return for some weeks, the intervals being very irregular, and depending on the exciting causes. When an individual, however, has once been unfortunate enough to suffer from a paroxysm of Asthma, he may be almost certain that it will recur at intervals of longer or shorter duration.

When Asthma is purely spasmodic, uncomplicated with any other disease, the individual, after the fit is over, recovers his breathing entirely, and suffers no inconvenience until the recurrence of another attack. It is true that spasmodic Asthma, not associated with other diseases, is not common, but that it does occur appears beyond a doubt; and we have the best of evidence to prove, that individuals have died during the fit, and on opening the body, not a trace of disease has been found. In the great majority of cases, however, the breathing during the intervals is either more or less affected, and symptoms of the morbid changes, which have either caused the disease, or resulted from it, may be easily traced.

CAUSES. *Predisposing causes.* Old people are most liable to Asthma, it being seldom met with in early life, and men are more subject to it than women, in the proportion of six to one; so, at least, says Joseph Frank, the most experienced physician and best medical writer that Germany has yet produced. People of nervous temperament are more disposed to Asthma than others, and it is aggravated by the causes which tend to excite the nervous system, such as excess in venery, long-continued mental excitement, want of sleep, the depressing passions, irritability of temper, excess in the use of the warm bath, &c. There are certain diseases which predispose to Asthma, though there can be little doubt that some of them are often produced by it; these are diseases of the heart and great blood vessels, indigestion, affections of the lungs, such as cold or catarrh of the *bronchi* or air passages, *emphysema* or dilatation of the air cells or minute extremities of the air tubes, gout, liver complaints, and uterine or hysterical affections. Hereditary disposition must be ranked among the predisposing causes, and also corpulency, and deformity of the chest and spine.

Exciting causes. The exciting causes or circumstances which

have an immediate tendency to bring on fits of Asthma are very numerous, the principal of which are, errors in diet, particularly if attended by acidity at stomach or *heartburn*; excess in drinking wine and spirits; distension of the stomach from an accumulation of wind; exposure to cold moist air, or to too dry an atmosphere; suppressed perspiration of the lower extremities, caused by sitting with cold or wet feet, sudden changes of weather, certain winds, and indeed all the causes which bring on cold or catarrh of the *bronchi* or air passages; sudden mental emotions, as anger, terror, surprise, &c.; loud, or too long speaking; certain occupations of artisans, which expose them to an atmosphere charged with dust; irritating gases, metallic fumes, or minute particles of cotton, wool, fur, and metal. In some people exhalations from the vegetable kingdom, as the effluvia from ipecacuan, from hay, or from grass in flower, will induce an attack of Asthma. The presence of an excess of the electric fluid in the atmosphere affects many asthmatic people. Some suffer least in flat countries and in large towns, pure mountain air being almost insupportable to them; others, again, are rendered miserable by the smoky atmosphere of a large town.

Varieties of Asthma. Authors have classed this disease in various forms, according to the respective views they have taken of it; but, in a practical point of view, the manner of classification can be of no great consequence. We see no necessity for making many divisions, and will therefore confine ourselves to the three following, viz.—1. The Spasmodic or Nervous Asthma. 2. The Dry Asthma. 3. The Humoral Asthma.

1. SPASMODIC OR NERVOUS ASTHMA. People of nervous temperament are most liable to this form of Asthma, which is distinguished from the other two forms by the absence between the fits of shortness of breathing, or any other symptom indicative of disease of the lungs or other organs, and is, as has been already stated, comparatively rare. The fit comes on suddenly, generally without any known cause, and is of short duration; it is accompanied with slight cough, and terminates with scanty expectoration.

2. DRY ASTHMA is always connected with irritation or morbid sensibility of the lining membrane of the *bronchi* or air passages.

Those who are subject to this form of Asthma are very liable to catch cold from changes of weather, trifling changes in dress, exposure to slight currents of air, and a variety of other causes of this nature ; the bronchial membrane, being in consequence kept almost in a constant state of irritation, at last becomes swollen, thickened, and assumes a dark red or livid colour, because its vessels, from want of tone, remain charged with an excess of blood. We then observe the symptoms of *dry catarrh* ; namely, shortness of breathing on any exertion, cough, and scanty expectoration of pellets of tough, greyish, or pearly-coloured mucus. If the *dry catarrh* go on, it generally induces *emphysema* or dilatation of the air cells or extremities of the minute ramifications of the *bronchi* or air tubes. The form of Asthma which is complicated with this state of the lungs is decidedly more common than any other, and is unfortunately almost incurable. The fits of dry Asthma are commonly preceded by fresh attacks of cold. The expectoration makes its appearance only towards the termination of the fit, and is sometimes altogether absent.

3. HUMORAL ASTHMA. This form of Asthma comes on slowly, and is accompanied with a suffocative cough, great oppression at the chest, and free expectoration throughout the fit, which continues longer than a fit of the spasmodic form. The attacks come on three or four nights in succession, or they may be renewed every night for a week or two, or even longer, the lungs during the intervals remaining in a very irritable state.

The mucous membrane of the air passages is thickened and congested, as in the dry form of Asthma ; indeed the principal difference which exists between this form and the humoral is the copious expectoration which takes place in the latter. Humoral Asthma is in fact the species which attacks individuals labouring under chronic catarrh, or chronic bronchitis.

Asthma, whether associated or not with disease of the heart, lungs, or other organs, is in the vast majority of cases, dependent on morbid sensibility, irritation, or inflammation of some grade, whether acute or chronic, of the bronchial membrane.

TREATMENT. In one point of view our knowledge of Asthma is in no way improved, inasmuch as we are still profoundly

ignorant of its real nature ; we cannot tell, for example, why it accompanies chronic catarrh in one case and not in another, or why it attends *emphysema* of the lungs, or certain diseases of the heart in some cases and not in others ; but in another point of view we have of late years acquired knowledge of great practical importance, since we are now much more intimately acquainted with the disorders which are associated with it, and on which it seems to depend, and can therefore direct our treatment to those disorders, knowing that when we succeed in removing them, we in general prevent the return of the Asthma.

In all intermittent diseases the most convenient arrangement is to divide the treatment into two parts. 1. The treatment during the attack. 2. The treatment in the intervals.

1. *Treatment during the attack.* In the purely spasmotic or nervous form of Asthma, unconnected with other diseases, and in cases where it attacks hysterical females, we, as a matter of course, resort to the class of medicines called antispasmodics, the most powerful of which is *opium* ; and this remedy, to be of use, must be given in large doses, ordinary ones producing little or no effect ; for in this as well as in all other spasmotic affections, there is an unusual resistance offered to the action of even the most powerful remedies. Care, however, must be taken to regulate the doses according to the strength of the patient and the urgency of the case. We give the four following prescriptions because it frequently happens that the medicine which alleviates or shortens the fit in one individual, produces no effect in another—

No. 24.

Laudanum, forty to sixty drops,
Æther, the same quantity,
Peppermint-water, two ounces. Mix.
To be taken at the commencement of the fit.

No. 25.

Camphor, three grains,
Musk, five grains,
Opium, one grain.

Mucilage a sufficient quantity to form two pills. To be taken at the commencement of the fit, and repeated if necessary after two hours.

No. 26.

Opium, one grain,
Carbonate of ammonia, five grains,
Camphor, a grain and a half.

Mucilage a sufficient quantity to form two pills. To be repeated after two hours if the fit continue.

No. 27.

Extract of henbane, six grains,
Tartar emetic, a quarter of a grain,
Nitre, eight grains,
Peppermint-water, two ounces. Mix.

To be taken at the commencement of the fit.

Some individuals are much relieved by drinking brandy and water; others again derive benefit from strong coffee, taken in the manner recommended by Sir John Floyer, Sir John Pringle, and Dr. Bree. Pringle says it should be taken without sugar or milk, an ounce for each dish, and the dose repeated every quarter of an hour.

When Asthma is connected with irritability or chronic inflammation of the bronchial membrane, opium, camphor, æther, ammonia, and other direct stimulants, are more likely to do harm than good; as a general rule they should be carefully avoided when the patient is affected with indigestion, shortness of breathing during the intervals, disease of the heart, or any other organic disease.

Blood-letting occasionally does good, but it should be used with the greatest caution, and only when the patient is young and plethoric; in such cases when the disease is commencing it often works like a charm.

Bathing the feet in warm water, to which a portion of powdered mustard has been added, and the application of mustard poultices over the chest, is a mode of treatment much used in France and Italy, and frequently with advantage.

Smoking the dried leaves and stalks, or the root of *stramonium* or thorn-apple, is frequently attended with the greatest benefit, though in some cases it increases the difficulty of breathing; as a general rule it does good only when it causes expectoration. The stramonium may be used alone or smoked along with tobacco; a small quantity should be employed at first, gradually increasing

the dose, until slight giddiness is produced. It may be safely tried in all cases.

The *lobelia inflata*, or Indian tobacco, has an action similar to that of stramonium; it is highly spoken of by several of the American physicians, and is at present much used in this country; but we cannot speak of it from our own observation. The dose of the powder is from eight to twenty grains, and the tincture, prepared as follows, is given in doses of half a drachm to two drachms in two ounces of distilled water—

No. 28.

Take dried leaves of the *lobelia inflata*, two ounces,
Rectified spirit of wine, a pint.
Macerate for twelve days, and strain.

A high opinion was at one time formed of electricity and galvanism during the attack, and also in the intervals; but from the uncertainty of their action, they are now almost entirely abandoned.

We are indebted to Dr. Bree for the following prescription, which is one of the best that can be used—

No. 29.

Extract of henbane, three grains,
Diluted nitric acid, thirty drops,
Tincture of squills, fifteen drops,
Water, an ounce and a half. Mix.

To be repeated every three hours during the fit.

This draught often gives relief when every thing else has failed. We have known five grains of powdered ipecacuan, given in a drachm of the oxymel of squill every hour, to alleviate the fit, both in the dry and humoral forms of Asthma.

If the fit be attended by irritability of the stomach and flatulence, the following draught may be found useful—

No. 30.

Prussic acid, four or five drops,
Tincture of assafœtida, a drachm,
Distilled water, an ounce and a half. Mix.

If the bowels be distended with air an enema should be administered, composed of two drachms of assafœtida, dissolved

in ten ounces of barley water, or the same quantity of decoction of marsh-mallow.

The French physicians generally prefer the following mixtures to promote expectoration during the fit, and they also gave them in smaller doses during the intervals—

No. 31.

Virginian snake-root, two drachms, infused in
Boiling water, six ounces, to which is added
Syrup of Tolu, an ounce,
Gum ammoniac, from one to two drachms.

Two tablespoonfuls to be given every hour during the fit.

No. 32.

Serpentary-root, half an ounce,
Boiling distilled water, a pint.

Macerate for four hours in a vessel lightly covered, and strain. Two tablespoonfuls of this infusion to be given every hour with a grain of powdered squill.

The squill occasionally causes vomiting, which may do good.

We have no confidence in the inhalation of æther or medicated vapours of any description ; breathing cool air is more beneficial, and certainly more agreeable to a patient struggling for breath, and often feeling as if he were about to be suffocated, than sitting with the spout of a tea-pot or inhaler in his mouth, breathing warm vapour. Indeed many patients cannot tolerate either warm vapour or warm drink.

The various remedies which have been recommended are but too frequently of no avail ; the fit runs its course in spite of every thing, and is even rendered worse in many cases by the indiscriminate use of stimulants. But though we can do little when the fit has once fairly commenced, yet timely treatment may be of the utmost service in preventing its coming on. We know that Asthma is usually associated with morbid sensibility or chronic inflammation of the bronchial mucous membrane, and that in all such cases the fit is almost invariably preceded by catching cold. If, therefore, when an individual is aware that he has caught cold (and there are generally certain premonitory symptoms which give him due notice), and is in consequence threatened with a fit of Asthma, he ought immediately to bathe his feet in hot water with mustard, then go to bed, drink freely

of barley-water or any other warm drink, and take sudorifics, such as

No. 33.

Dover's powder, fifteen grains,
James's powder, five grains. Mix.

To be taken in a little jelly.

No. 34.

Nitre, twenty-five grains,

Tartar emetic, a quarter of a grain, dissolved in barley water, the dose being repeated until copious respiration is brought on, and the bowels opened the following morning by a dose of Epsom salts or a Seidlitz powder.

By these means, if used sufficiently early, the cold will be checked and the fit of Asthma prevented, and this is more easily effected than to mitigate the fit or cut it short after it has commenced.

2. Treatment in the intervals. The manner of living and habits of people affected with Asthma are generally such that they can have very little chance of getting rid of the disease; indeed they but too frequently adopt the most direct means to prolong their suffering. Knowing their liability to catch cold, and being well aware that a cold or catarrh is generally the prelude to a fit of Asthma, they, at least those who have it in their power, shut themselves up in close rooms on the approach of winter, dreading the slightest exposure to cold air; they deprive themselves of exercise, and in consequence indigestion with its long train of depressing symptoms is brought on, the general health gets impaired, and life becomes almost a burthen. If they do occasionally venture out in the open air they return to the same overheated atmosphere, or sit near a large fire, not taking into consideration that by far the most common cause of cold is the sudden change from cold air to an overheated room. The patient blames the cold air, but the fact is, the lungs bear cold well, or an equal temperature, whether cold or hot. We think it is M. Lefevre, one of the best of the French writers on Asthma, who says that he is quite convinced he would never have a return of the complaint, if he had it always in his power to breathe air of the same temperature, weight, and humidity: this is of course impossible, but asthmatics nevertheless can do a great deal to keep off the fits, by avoiding sudden changes of temperature.

A great variety of expectorant, tonic, and narcotic remedies have been recommended during the intervals, but we are quite convinced that more dependence should be placed in proper regimen than medicine in this disease. No one need expect to get rid of Asthma who lives in the artificial state above alluded to; regular exercise in the open air, either on foot or horseback, is absolutely necessary in all seasons, and the means of next importance is cold bathing: in winter the patient should sponge his body every morning on getting out of bed with salt and water (two tablespoonfuls of salt to each pint of water), rubbing the body well after the ablution with rough towels. The water used should at first be tepid, and then gradually colder until the patient can bear it perfectly cold. In summer, bathing in the sea or the cold shower bath will be preferable. Cold ablution in winter tends more than any thing else to do away with the susceptibility to cold which exists in the catarrhal forms of Asthma; after using it regularly for some time, exercise in the open air can not only be taken in winter with impunity, but with the greatest advantage. To regular exercise and cold bathing must be conjoined the strictest attention to diet, which should be light and easy of digestion, and never in such quantity as to exceed the powers of digestion.

To relieve indigestion arising from irritability or functional derangement of the stomach, the following pills will be found in most cases invaluable—

No. 35.

Dried carbonate of soda, thirty grains,

Ipecacuan in powder, six grains,

Extract of henbane, forty-five grains. Mix, and form into twenty pills. Three of these pills to be taken daily. One in the morning, another in the course of the day, and a third at bed-time.

It may be necessary to continue these pills ten days or a fortnight. Half a grain of sulphate of quinine should be given after each pill in a little water during the first week; after the expiration of that period the dose should be increased to a grain in a little port wine and water. If the indigestion be caused by chronic inflammation of the mucous membrane of the stomach and bowels, cupping, or the application of leeches over the

stomach, and *low diet* will be required. (See the article on Indigestion.)

Purging does no good in Asthma; the patient, however, should take care to keep his bowels regular by taking, when necessary, a teaspoonful or two of Gregory's stomachic powder, prepared as follows—

No. 36.

Calcined Magnesia, eight parts,
Rhubarb, in powder, two parts,
Ginger in powder, one part. Mix.

Or the patient may take a little castor-oil, or any other laxative which he has found to answer best.

The production of an eruption on the chest by the use of the *tartar emetic ointment* (see page 26), is often of considerable benefit, if continued a sufficient length of time.

Tonics become necessary if the patient be debilitated, and no slow inflammatory action going on. A grain of *sulphate of quinine* may be given twice a day, or the oxide of zinc so highly spoken of in this disease by Dr. Withers.

No. 37.

Take of oxide of zinc, twenty-four grains,
Ipecacuan in powder, twelve grains,
Myrrh in powder, twenty grains,
Syrup, a sufficient quantity to form twelve pills.
One a dose three or four times a day.

BARBIERS.

The chronic or slow form of Beriberi has received the name of Barbiers. See *Beriberi*.) It begins with pain, trembling, and a pricking sensation of the legs, thighs, and arms, which gradually become enfeebled so as to prevent the individual walking steadily or using his arms with freedom; after some time the appetite is much impaired, and indigestion, troubled sleep, and emaciation soon follow. The patient may remain a considerable time in this state, and then gradually recover; but if the disease go on, the limbs become palsied, the pulse weak and quick, the voice hoarse, difficulty in the articulation of words, and the weakness and emaciation increase, until at length the patient is carried off.

It may continue months or even years, its duration being very irregular.

TREATMENT. Barbiers has been always considered a disease of nervous debility, and therefore tonics, cordial medicines, and nutritive diet, are commonly made use of. Frictions over the spine and palsied limbs, and the application of blisters over the lower part of the spine, are usually resorted to. Benefit has been derived, in some cases, from electricity, and also from the use of strychnine; but these means are of little value compared with the advantage derived from change of climate, which in general restores the patient to health.

BERIBERI.

Beriberi is a disease of India, characterized by difficulty in breathing, with weakness, stiffness, and a sensation of numbness in the lower limbs, a bloated appearance of the face, and drop-sical swelling of the whole body.

This disease commonly comes on slowly, and terminates in the course of three or four weeks, though sometimes it attacks suddenly, and destroys the patient in the course of a day or two.

In the first stage of the complaint the symptoms are weakness, lassitude, and unwillingness to move about; there is pain and numbness of the legs, with considerable difficulty in walking, and the slightest exercise affects the breathing. As the disease advances the face becomes bloated, the difficulty in breathing more oppressive, the lips acquire a livid colour, and the inferior extremities are almost completely palsied. The bowels are constipated, and the urine is scanty, of a red or dirty brown colour, and voided with difficulty; in some cases it cannot be passed at all, in consequence of the bladder being palsied. The pulse, which was at first quick, small and hard, becomes irregular and intermittent; at length fainting, vomiting, great restlessness, extreme anxiety, and other bad symptoms come on, and the patient dies in great agony.

CAUSES. The nature and causes of Beriberi have not been sufficiently investigated; and are by no means well understood. It is most prevalent on the Malabar coast, in Ceylon, and all along the coast from Madras, as high as the twentieth degree of north

latitude, and it may be almost always met with in some districts of these countries. In some years it prevails to a much greater extent than in others, though this cannot be well accounted for, inasmuch as it carries on its ravages in dry as well as in wet weather, when the air is cold and charged with vapour, as well as when the hot wind blows. Beriberi is generally supposed to arise from exposure to cold damp air and poor diet, with bad water, but still we are aware that under circumstances the very opposite of these, both our officers and men have been carried off by it. It seems highly probable that *malaria* or the effluvia from decaying vegetable matter, under certain circumstances, if not the cause, is at least intimately connected with this disease.

There are two facts relative to Beriberi well worthy of notice ; the first, that it is more prevalent near the coast than higher up the country—indeed, we have no account of its ever having been met with far inland ; the second, that people are seldom if ever attacked by it until they have resided several months in a part of the country where it prevails.

TREATMENT. Beriberi has been supposed by some medical men to be a disease of debility, and they have treated it according to the doctrine of Brown, by administering stimulants, such as opium, camphor, æther, brandy, &c. Others, supposing it to be a disease of increased action, have consequently adopted an opposite treatment, namely, free blood-letting, and the exhibition of mercury, until the mouth was affected. In some cases the stimulating treatment has appeared to produce a good effect, at least the patients have recovered under its use ; others, again, have recovered after losing large quantities of blood, and having their systems affected by mercury. But, on the other hand, many have died after the free administration of stimulants, and the mortality has been equally great after blood-letting and mercury, some having sunk before the mercury had affected the system, others when completely under its influence with their mouths sore.

Beriberi is in fact so little known, that no decided treatment on scientific principles can be laid down. We are inclined, however, to view it as an inflammatory disease, and are therefore of opinion that blood-letting is advisable among Europeans at the commencement of the attack, from the tendency which this means

has to restore the balance of the circulation, thereby relieving the lungs, liver, and spinal marrow, organs which in this disease are generally congested, or in other words overcharged with blood; but in debilitated subjects and among the natives, general blood-letting cannot be tolerated. When it is observed that the clot, or coagulated part of the blood is covered with a buff-coloured crust, we are then certain that blood-letting is indicated, and it will be proper to have recourse to it again, according to the urgency of the case and the strength of the patient; taking care however not to carry the depletion too far, so as to induce a state of debility, from which, after acute diseases in tropical climates, it is often impossible to rally the patient. The buff-coloured covering of the coagulated portion of the blood is an unequivocal sign that some inflammatory action is going on; it becomes therefore necessary to assist the action of the blood-letting (which is the most powerful agent we possess in subduing inflammation), by *nitre* in conjunction with *tartar emetic*, a drachm of the former and one or two grains of the latter, dissolved in barley-water or in any demulcent drink, to be given in the course of the day; care must be taken not to bring on vomiting by administering too much at once. The patient's bowels should be kept freely open by frequent doses of *calomel* and *gamboge*, five grains of each in a little jelly. Cupping, and the application of leeches along the course of the spine, and also frequent frictions with warm oil of turpentine over the spine and legs, have been found useful. If vomiting come on in the course of the disease, it may be checked by applying over the stomach pieces of flannel dipped in warm turpentine, and giving at the same time *tincture of henbane* in two-drachm doses.

When the symptoms become less urgent, and the disease considerably subdued, the *sulphate of quinine* in two-grain doses twice or thrice a day should be administered, and light nutritive food given, gradually increasing it, so as to keep up the strength of the patient without producing excitement.

In debilitated subjects, the same treatment, modified according to the particular case, should be resorted to, with the exception, as above mentioned, of general blood-letting. The patient will do well also (if in his power) to quit the country as soon as his strength will allow him to do so.

BISMUTH.

The subnitrate of Bismuth (or Magistery of Bismuth) is an excellent antispasmodic and sedative. It is a valuable remedy in chronic affections of the stomach, and very efficacious in checking vomiting when the stomach has been over-excited. In cases of indigestion, attended with heartburn and pain at the stomach after eating, we have known it produce the best effects when combined with extract of henbane, in the following form—

No. 38.

Take of subnitrate of bismuth, thirty grains,

Extract of henbane, the same quantity. Mix, and divide into twelve pills. One to be taken in the morning, one in the middle of the day, and two at bed-time.

This treatment, with low diet, and abstinence from every thing stimulating, is to be continued during a week or ten days.

Some practitioners prefer combining it with rhubarb and magnesia.

No. 39.

Take of subnitrate of bismuth, two or three grains,

Rhubarb, two grains,

Magnesia, five grains. Mix.

To be given as a dose, and repeated twice or thrice in the course of the day.

Bismuth does not dissolve in water, and if not given in the form of pills, should be mixed with a little jelly, honey, or any other convenient vehicle.

INFLAMMATION OF THE URINARY BLADDER.

The symptoms which characterize Acute Inflammation of the Bladder are heat, tension, and pain more or less severe at the lower part of the belly, which is increased on pressing with the hand over the bladder, or by sneezing, coughing, going to stool, or by any movement of the body. There is great and frequent desire to void the urine, which is high-coloured, and passed in a few drops at a time, with much pain and difficulty, and sometimes it cannot be discharged at all. As the disease advances, the lower part of the belly appears swollen, in consequence of the space which is taken up by the bladder distended with urine; the slightest pressure there is then insupportable, and

the whole abdomen is painful to the touch, the pain extending to the loins and anus, and even shooting down the thighs. When the inflammation has gone to this extent, the skin is hot and dry, the pulse quick and hard, and the tongue dry with great thirst. If the disease go on increasing, the pulse becomes small and very frequent, hiccup, vomiting, delirium, and fainting ensue, and death terminates the patient's suffering.

The inflammation, however, may be of any grade; sometimes it is mild, yielding readily to proper treatment, and continuing but a short time.

CAUSES. Inflammation of the Bladder may be brought on by a variety of causes, such as stone in the bladder, wounds, blows, irritating injections, the inflammation of gonorrhœa, extended along the urethra or urinary canal to the bladder, boils, swelling of the prostate gland, the internal use of Spanish flies (cantharides), allowing the urine to remain too long in the bladder, excess in drinking wine or ardent spirits, long-continued exercise on horseback, particularly if the individual has been unaccustomed to it; inflammation of neighbouring parts, as the womb or rectum, the introduction of instruments into the bladder, exposure to cold or sudden changes of temperature, and long-continued compression of the bladder by the head of the child during tedious labour. The sex also must be considered as a predisposing cause, men being more liable to this disease than women.

Acute Inflammation of the Bladder continues from ten to twenty or thirty days, and is in general got rid of by the necessary treatment, without leaving any bad symptom, but sometimes it terminates in ulceration or mortification, or matter is formed which passes off along with the urine, or is discharged into the cavity of the abdomen; these terminations, however, are rare, compared with its not unfrequent sequence, chronic inflammation. (See *Catarrh of the Bladder*.)

TREATMENT. It sometimes happens when a medical man finds a patient suffering from Inflammation of the Bladder, with incapability of voiding the urine, that he attempts to give relief by emptying the bladder with an instrument used for that purpose, called a *catheter*. If he succeed in effecting this easily, the patient for a time will be much relieved, but it occurs not

unfrequently that the inflamed and swollen state of the neck of the bladder or other causes, render it almost impossible for him to introduce this instrument; unwilling to be foiled, however, he endeavours repeatedly to reach the bladder, and perhaps at last succeeds in drawing off the urine. It may readily be supposed, from the tender and irritable state of the parts, that the patient is put to a great deal of pain, and moreover the temporary relief derived from the abstraction of the urine is not sufficient to compensate for the irritation produced by long-continued efforts to introduce the catheter. Whether the urine be withdrawn or not, the most active treatment should be used to subdue the inflammation; to effect this the patient must be bled freely from the arm, and at least thirty leeches should be applied over the bladder and round the anus, followed by warm fomentations to promote the bleeding, or this may be done still more effectually by sitting in a warm hip bath. Ten or twelve leeches should be applied on the following day, if the inflammation be not considerably abated, and indeed the local blood-letting must be had recourse to repeatedly, until the inflammation is overcome. The following pills are to be given every four hours—

No. 40.

Extract of henbane, twenty-four grains,
Tartar emetic, three grains. Mix, and form into twelve pills.

These pills are to be continued regularly until the inflammation is diminished; if they produce much giddiness or vomiting they should be given at longer intervals, but if they be tolerated without acting too powerfully on the head or stomach, it will be advisable to give one every three hours. Instead of tartar emetic and henbane, calomel and opium may be given in the following form—

No. 41.

Calomel, twenty-four grains,
Opium, two grains,
Syrup, a sufficient quantity to form twelve pills.

One to be given every two hours.

Warm fomentations should be constantly applied over the lower part of the belly, and the bowels are to be acted on by a full dose of castor oil, or a clyster of decoction of marshmallow

or linseed-tea, with an ounce of castor oil. The diet must be very sparing in this as in all other inflammatory diseases. At the commencement only very small quantities of linseed-tea or other mucilaginous drink, should be allowed ; but when the inflammation is giving way, and the urine begins to be voided more easily, the linseed-tea or any other demulcent beverage, such as gum-water, prepared by pouring a pint of boiling water on an ounce of gum arabic, may be given freely with the addition of from five to ten grains of nitre to each pint.

IRRITABLE BLADDER.

This is a most distressing disease, and very difficult of cure. The patient suffers the most acute pain when he allows the urine to accumulate in the bladder, and is therefore obliged to make water frequently, in some cases every half hour, or even oftener. The evacuation of the urine gives immediate relief, but as it collects again the pain gradually increases. This affection, after continuing a considerable length of time, frequently terminates in ulceration of the bladder; all the symptoms then become aggravated, and the unfortunate patient drags out a wretched existence, until death puts an end to his misery.

CAUSES. Irritable Bladder may be caused by chronic or slow inflammation, and is therefore sometimes the sequence of acute inflammation of the bladder. (See page 53.) It may be brought on by gonorrhœa, by retaining the urine too long when the calls of nature ought to be obeyed, or may depend on increased sensibility of the bladder, arising from a deranged state of its nerves, or from some peculiarity of the urine, which may be either too acid or too alkaline. It is sometimes caused by an excited state of the brain, the result of intense study, want of sleep, or indigestion, caused by free living.

TREATMENT. When Irritable Bladder is caused by chronic inflammation, recourse should be had to local blood-letting, carried as far as the patient's strength will admit of, by the application of ten or twelve leeches to the lower part of the belly (over the bladder) every other day. The *extract of henbane* will be found useful, in pills of two or three grains, three times a day; this remedy sometimes causes giddiness at first, it is therefore

better not to go beyond six grains a day in commencing, gradually increasing the dose according as the patient can bear it, and taking care always to diminish the quantity a little when giddiness is produced. Henbane in general will be found to answer better in this disease than opium, and it can be discontinued without difficulty at any time; the habit of taking opium, on the contrary, is easily acquired and most difficult to get rid of; and after all it serves no other purpose than merely to palliate the disease. In using counter-irritation, blisters should be avoided, for there can be no doubt that the cantharides (Spanish flies) are sometimes absorbed, and from their irritating action on the urinary organs the inflammation might be aggravated. The *tartar emetic ointment* (see page 26) will be found preferable; it should be rubbed in freely over the lower part of the belly, and used regularly so as to keep up a copious crop of pustules. An observance of the horizontal position is of the greatest importance in diseases of the bladder; the patient therefore must abstain from moving about or sitting up for any length of time.

The bladder will be much relieved by introducing a gum-elastic catheter, and allowing it to remain; this instrument must be only a little longer than the urinary canal or urethra, which is generally about nine inches in length, so that its end may not rest upon the neck of the bladder, into which it should just enter, without being allowed to extend farther; to the other end of the catheter must be fastened a pig's or bullock's bladder, into which the urine will run as fast as it is secreted, and by this means the bladder will be allowed to remain at rest, no effort being required to expel the urine.

In some cases the catheter when frequently introduced or allowed to remain long in the bladder, brings on a slight degree of fever; it must then of course be laid aside until the fever has gone off.

If Irritable Bladder depend on an alkaline state of the urine, the *muriatic* or *nitric acid* should be given, mixed with a decoction of *pareira brava* (American wild vine), as follows—

No. 42.

Diluted muriatic acid, two drachms,

Decoction of pareira brava, eight ounces. Mix.

Two tablespoonfuls a dose twice a day.

No. 43.

Diluted nitric acid, ten or twelve drops,
Decoction of pareira brava, two tablespoonfuls
With syrup and water, as a dose three times a day.

When the urine is too acid, a scruple of carbonate of soda is to be exhibited along with two or three tablespoonfuls of decoction of pareira brava three times a day.

The decoction or infusion of pareira is made as follows—

No. 44.

Take of pareira, six drachms,
Boiling water, a pint.

Macerate for two hours in a vessel lightly covered, and strain.

To test the urine litmus paper is made use of, which may be had at any chemist's shop. If a bit of blue litmus paper be dipped in urine possessing an excess of acid, it will be turned red, but if the urine contain an excess of alkali, it will turn red litmus paper blue. There is another simple test by which we ascertain when the urine is highly alkaline; a piece of paper tinged yellow by dipping it into a decoction of turmeric, when immersed in the urine, changes from the yellow colour to brown.

When this disease is accompanied by chronic inflammation of the bladder, the diet must be very moderate; animal food should be entirely abstained from, and nothing of a stimulating quality should be taken; when it arises from excess in eating and drinking, and indulging in high-seasoned dishes, an entire change in the patient's manner of living becomes absolutely necessary, and unless he has the resolution to confine himself to low diet, medicine will be found of little use. When the patient is weak, with a pale or sallow complexion, and his urine alkaline, the diet must be nutritious, and animal food may be allowed, care being taken not to charge the stomach with more at a time than can be easily digested. Sedentary habits should be given up, and regular exercise taken in the open air.

BLEEDING FROM THE NOSE.

This is by far the most common, and certainly the least dangerous haemorrhage. In general it is slight and frequently

advantageous to the individual, but is injurious only when it continues too long or recurs too frequently.

Before spontaneous Bleeding from the Nose commences, the individual not unfrequently experiences head-ache, throbbing of the temples, flushing of the face, giddiness, coldness of the feet, a sensation of tension, heat and itching of the nostrils, and other symptoms showing an excess of blood in the head, all of which are soon relieved by the discharge of blood. When the person is pale and of a delicate habit of body, the haemorrhage often comes on suddenly without being preceded by any symptom indicating its approach.

CAUSES. Bleeding from the Nose occurs most frequently in young people with an excess of blood, and in females with suppressed menstruation. The causes which commonly produce it are those which determine the blood too strongly to the head, such as exposure to heat, too full living, excess in drinking intoxicating liquors or strong coffee; long-continued study, anger, or any violent mental excitement, long watching, constipation of the bowels, and suppression of the discharge from piles. It is also caused by wearing the neckcloth or stays too tight, blows on the nose, &c. It comes on from scurvy, in consequence of the blood losing its natural consistence, and also during typhus fever, and sometimes from disease of the heart and liver.

TREATMENT. In the majority of cases, as has been already mentioned, Bleeding from the Nose is salutary, as being an effort of nature to relieve the head from the blood with which it is overcharged. As soon as a sufficient quantity of blood has escaped, the head-ache, sensation of weight in the head, throbbing at the temples, and other symptoms of fulness of blood, are removed, and the haemorrhage ceases of its own accord; we should therefore avoid checking it, which people generally attempt doing as soon as it commences. If the bleeding, however, go on to such an extent (which it seldom does) as to cause paleness of the face, sickness at stomach, and a sensation as if the patient were about to faint, it then becomes necessary to use means to arrest its progress.

The individual should be exposed to cool air, and his head is not to be allowed to hang over the basin which receives the blood, but must be kept raised; pieces of linen dipped in vinegar

and water are to be applied over the forehead and temples and round the nose, or ice when it can be got should be applied to the nose; nor should the popular remedy be forgotten of placing a large key or piece of cold metal between the clothes and the back. If the bleeding still continue, vinegar and water or iced water should be applied frequently over the head, and the feet and hands placed in warm water containing powdered mustard. Bleeding from the Nose seldom resists this treatment, but in the event of its doing so we have still other means in reserve. We now have recourse to injecting vinegar and water, or any of the following lotions up the nostrils with a syringe, or pieces of lint or linen rag may be moistened with them and passed up the nostrils, so as to plug them, and thus prevent the blood escaping—

No. 45.

Take of sulphate of zinc (or white vitriol), a drachm,
Water, ten ounces. Mix.

No. 46.

Take of purified alum, a drachm and a half,
Vinegar, an ounce and a half,
Water, nine ounces. Mix.

No. 47.

Take of tincture of steel, a drachm and a half,
Water, six ounces. Mix.

Powdered gum arabic blown into the nostrils by means of a quill will sometimes stop the haemorrhage when every thing else fails. When clotted blood begins to form in the nostrils it should be disturbed as little as possible.

Cold vinegar and water, or ice applied to the thighs and genitals, has sometimes an excellent effect.

Bleeding from the arm is seldom necessary, and ought never to be made use of when the nose bleeds freely, nor when the individual is pale and debilitated, with his blood unusually thin; but when the blood continues to fall from the nostrils in drops for a considerable length of time, and the person is of a robust habit of body, with flushed face, and complains of buzzing in the ears, throbbing at the temples, and other symptoms indicative of a preternatural quantity of blood in the head, then free

blood-letting is advisable, and will in all probability put a stop to the haemorrhage.

The internal treatment consists in opening the bowels freely with calomel and jalap, five grains of the former and sixteen grains of the latter to be taken in a little jelly or honey ; or a full dose of castor oil may be given, and cooling acidulated drinks administered, such as lemonade, cream of tartar beverage (see page 12), or cold water rendered acid by mixing with it a portion of elixir of vitriol. This treatment will generally be found to answer the purpose, but in extreme cases it is necessary to give *sugar of lead* (a powerful remedy in checking haemorrhage) in conjunction with opium or some preparation of it.

No. 48.

Sugar of lead, two grains,
Water, an ounce and a half,
Vinegar, half a drachm,
Black drop (or Battley's opiate), five drops,
Syrup, a drachm. Mix.

This draught to be repeated every four or five hours, or in such manner that the quantity of sugar of lead does not exceed eight or ten grains in twenty-four hours.

No. 49.

Sugar of lead (or acetate of lead), six grains,
Acetate of morphia, one grain, or extract of opium, three grains,
Confection of roses, a sufficient quantity. Mix, and form into six pills.
One to be given every three hours; the quantity of sugar of lead being confined as above to eight or ten grains in the course of twenty-four hours.

When the general health is much impaired, and the constitution broken down, as it is commonly termed, the blood is sometimes thinner than natural, and may continue oozing from the nostrils during a day or two, or even longer, and cause debility to an alarming extent. In such cases we must adopt a stimulating and restorative treatment. Port wine and brandy and water should be given, and the strength must be kept up by strong soup, animal jelly, and other nourishing food. The subjoined mixture, followed by two grains of *sulphate of quinine*, will be advisable every four or five hours—

No. 50.

Laudanum, fifteen drops,
Tincture of myrrh, half a drachm,
Camphor mixture, an ounce. Mix.

The following pills may be given in place of the mixture—

No. 51.

Subcarbonate of ammonia and
Camphor, of each eighteen grains,
Opium, three grains,
Extract of gentian, a sufficient quantity to allow the whole to be formed into
six pills. One a dose every four or five hours.

When Bleeding from the Nose comes on in men advanced in life, who are in the habit of living freely and enjoying all the luxuries of the table, it ought to serve as a warning of the approach of apoplexy, and distinctly points out the necessity of a change in their manner of living, which ought to be moderate and suited to their age and habit of body. In such cases it will be proper to place a seton in the nape of the neck.

Boys from eight to fourteen years of age, whose bowels are habitually costive, are very subject to Bleeding from the Nose, which may be got rid of in most cases by the use of *carbonate (or rust) of iron* in five-grain doses in a little jelly twice a day, continuing it during three or four weeks. It is scarcely necessary to mention the necessity of occasional doses of some mild laxative medicine.

Bleeding from the Nose may occur in females, in consequence of obstruction of the menstrual discharge. For the treatment of this form we must refer our readers to the article in which that subject is described.

BLOOD-LETTING.

It is unnecessary, under this head, to enter into any detail with regard to the diseases requiring Blood-letting, because all the cases which demand this operation are distinctly pointed out in other parts of this work. Our object here is to give a few simple rules, by which Blood-letting may be performed with safety. For though it is the province of the surgeon to use the lancet, yet cases must occur frequently in which surgical assistance cannot be procured, and where immediate Blood-letting is not to be dispensed with, without endangering life. How often does it

happen on board of ship, in remote country districts, and in our colonies on plantations distant from towns, that medical aid is urgently required, and no practitioner is to be found within many miles? Under such circumstances, let us suppose for example a person to fall down in a fit of apoplexy, or to be attacked with inflammation of the lungs or any other acute disease, is he to be deprived of the most powerful remedial means we are acquainted with in such cases, because no medical man is near? Certainly not, since any one possessed of common courage, by following a few simple directions, which cannot be mistaken, may open a vein at the bend of the arm with perfect safety, and thus be the means of relieving extreme suffering, and perhaps of saving a valuable life.

The operation of Blood-letting is usually performed at the bend of the arm, the veins there being in general more superficial, larger, and more distinctly seen than any where else. It was formerly customary to abstract blood by opening the jugular vein, the temporal artery, and sometimes the large veins at the ankle; but it is now generally admitted that opening these vessels has no advantage over the more convenient and simple operation at the bend of the arm.

It is true, whether from ignorance of, or neglect in using the precautions which ought to be observed in Blood-letting, that it may be attended with considerable risk; but still we must allow that the risk is not so great as the patient in many cases would run, from this operation being delayed or not performed at all.

The first thing to be done before using the lancet, is to ascertain the position of the artery at the bend of the arm.

This vessel will in general be felt pulsating immediately under the largest vein. A fillet or bandage about two fingers' breadth and a yard in length (a riband or garter will answer the purpose), is then to be applied round the arm about a finger's breadth above the place where the opening is to be made, which will cause the veins to rise, but care must be taken not to fasten it so tight as to prevent the pulse being felt at the wrist. The next thing to be done is to make choice of a vein. The largest vein would be from its size the most suitable, were it not that an artery, as above mentioned, runs immediately under it. This vein must therefore be avoided, because the danger of passing

the lancet too deep and wounding the artery is very considerable, and the consequences resulting from such an accident are always of a serious nature. The vein, therefore, next in size, is to be preferred. It ought, however, to be remarked that neither arteries nor veins are always regular in their course, and therefore with those unaccustomed to perform the operation, it should be held as a rule that the vein under which the artery is felt throbbing, is not to be opened. The operator should now grasp the elbow and place his thumb upon the vein, a little below the place where he intends making the puncture, with a degree of firmness sufficient to prevent it rolling under the skin or changing its position ; the lancet held in the manner shown in the annexed plate is then to be passed obliquely into the vein.

To support the arm and prevent any change in its position while the blood is flowing, it is usual to place a staff in the hand, which the patient is to squeeze and turn round and round, in the event of the blood not running freely. When the requisite quantity of blood has been discharged, the bandage is to be removed, and the operator placing the thumb of his left hand over the wound, with the other hand washes the blood from the arm. The sides of the wound are then to be placed in contact, and a small compress of old linen applied over it, which is to be secured with a bandage passed round the elbow in the form of the figure 8. The crossing of the bandage should take place immediately over the compress. Sometimes, after the arm has been bound up, the blood makes its way through the linen : as soon as this is observed, the bandage of course must be bound tighter, and may be slackened a little, some time after the bleeding has ceased. The bandage should not be removed before two or three days, and the arm is to be kept in a sling during at least twenty-four hours.

It occasionally happens, in consequence of the patient changing the position of his arm, while the blood is flowing, that the skin slips over the opening in the vein, and the blood in consequence collects under the skin, forming a dark-coloured swelling. This occurrence should not create alarm, for the swelling either disappears of itself, or may be easily got rid of by washing the part frequently with a little Goulard water, vinegar, or spirits and water, or any other cooling lotion.

Inflammation sometimes takes place at the wound, attended with a good deal of pain, and may even terminate in the formation of matter. This may arise from irritability of the patient's system, or it may be caused by using a dirty lancet, or one which had been previously employed for opening a boil. In this case purges of Epsom salts should be given, and two or three leeches applied round the part, which is afterwards to be kept cool by the frequent application of Goulard water. But if matter cannot be prevented forming, it then becomes necessary to apply warm poultices.

The most formidable accident resulting from Blood-letting is puncturing the artery in the manner above described; when this occurrence takes place, blood of a bright red colour instantly issues from the wound in jerks, and is at once to be distinguished from the dark blood of a vein which flows in a continued stream. The vein being in general wounded along with the artery, the arterial and venous blood are discharged at the same time, thus putting the nature of the accident beyond a doubt. The following case, which came under our observation about eighteen months ago, will serve as an illustration of the consequences which may arise from this accident. A surgeon's apprentice, in bleeding a man, transfixed the vein and wounded the artery; he succeeded, with considerable difficulty, in stopping the bleeding; but either ignorant of the mischief he had done, or unwilling to let it be known, concealed the circumstance from his master. Inflammation of the arm took place, poultices were applied, and at length an aneurysm (or tumour containing blood) made its appearance. The man being no longer able to work, was obliged to have recourse to the parish for relief. The parish surgeon seeing a tumour to which poultices had been applied, plunged his lancet into it, under the supposition that it contained matter. The flow of blood which immediately followed soon convinced him of his error; he then attempted to tie the artery, but not being able to effect this, cut off the unfortunate man's arm. Thus from ignorance or inattention in performing the simple operation of Blood-letting, a stout man, the father of a family, was rendered incapable of working for the rest of his life.

When this accident occurs, all that can be done is to apply

PLATE I.

Fig. 1.



Fig. 2.



Fig. 3.



pressure over the wounded vessel, until a surgeon can be found to tie it. Compression in the following manner is easily managed: a small compress formed by rolling up or doubling a piece of linen or lint, is to be applied immediately over the wound; over this a larger compress is to be placed, then a third still larger, and so on, until a sort of pyramid is formed with its point resting on the wound; a bandage must then be firmly applied in the form of the figure 8.

In fat people it sometimes happens, in spite of all the means resorted to, such as rubbing the arm, and placing it in warm water, that it is quite impossible to render the veins visible. In such cases blood may be drawn from the ankle. This operation is sufficiently simple. A bandage is to be applied round the leg, about three fingers' breadth above the ankle, and the foot immersed for some time in warm water, to make the veins rise; the largest vein either at the outside or inside of the ankle is then to be opened, and the foot again plunged into warm water, otherwise the blood would not run freely. One disadvantage attending this operation is, that the quantity of blood lost cannot be exactly ascertained, in consequence of the necessity of keeping the foot in warm water; an idea, however, may be formed of the extent of the discharge, from the colour of the water and the quantity of clotted blood found at the bottom of the vessel.

BOILS.

A Boil begins with a pimple in the skin, which continues to enlarge until it reaches the size of a walnut, though sometimes it does not extend beyond the size of a large pea; it is of a conical shape, red, or of a purple hue, and hard, with burning heat and great pain. Between the fourth and eighth day it becomes very prominent, and begins to *point*; a speck of matter may then be seen on the summit, which gradually softens; the skin at last bursts, and matter mixed with blood is discharged through a small opening. A day or two after this, the core, which is supposed to be a portion of dead cellular substance, finds its way out of itself, or may be squeezed out, leaving an open cavity, which soon fills up, and heals entirely about the twelfth or fourteenth day.

A Boil seldom comes alone, there are generally several, either at the same time or following one another. Boils may appear on any part of the body, but they commonly form on the face, nape of the neck, inside of the thighs, hips, arm-pits, groin, or near the anus.

CAUSES. Children and people in robust health are most subject to Boils; they often come on without any known cause, and appear more frequently in spring than at any other season. They may be brought on by friction, inattention to keeping the skin clean, or from irritation of the digestive organs, and they sometimes follow fever or inflammatory eruptive diseases.

TREATMENT. It is needless to attempt preventing a Boil going on to suppuration; it almost invariably follows the course above described, in spite of every means used to arrest its progress. We should, therefore, endeavour to hasten the suppurative process, by the application of warm bread and milk poultices, or poultices of linseed. In many cases a piece of diachylon plaster applied over the part and changed twice a day, will answer better than any thing else. If the Boil be of a very indolent character, the application of roasted onions will be of service, or poultices of honey mixed with oatmeal. As soon as it is known that the tumour contains matter, the best plan is to give it vent, by making a free opening with the lancet, and then squeezing out the matter along with the core. When the patient is averse to this, and allows the Boil to burst of itself, the opening is always small, and the core consequently does not readily find its way out: in some cases it requires to be drawn away. In general the cavity heals quickly after the core is discharged, and nothing is required except a little cerate or other simple dressing; the sore in some cases, however, becomes indolent, and requires dressing of a more stimulating nature, such as

No. 52.

Basilicon, a drachm,
Red precipitate, five grains. Mix.

A little of this ointment to be applied on a piece of lint or linen rag.

When there is hardness of the part after the sore is healed, it should be rubbed with camphorated mercurial ointment night and morning.

With regard to the internal treatment, all that is necessary in general is to abridge the diet a little, avoid stimulating food, and keep the bowels open with *Epsom salts* or other cooling purgatives. When a succession of Boils arise from disorder of the digestive organs, or from derangement of the system generally, it will be advisable to give three grains of *Plummer's pill*, or the same quantity of *blue pill* every second night; and an infusion of chamomile flowers, with twenty grains of *carbonate of soda* every morning, until the general health be improved.

INFLAMMATION OF THE BOWELS.

This disease, when severe, is preceded by general uneasiness, shivering and heat alternately, listlessness, and a feeling of weakness; a sharp pain in the bowels soon follows, with griping, and a sensation of internal heat at the seat of the pain, which is generally about the navel. The pain is constant, and is increased by the slightest pressure over the belly, which after some time becomes hot, swollen, and tense. There is great prostration of strength, urgent thirst, sickness at stomach, perhaps vomiting, and constipation of the bowels, though sometimes there is purging of a thin, bilious, stinking matter. The pulse is quick, hard, and small, the urine high-coloured, and passed in small quantities, and the tongue is at first white, and becomes afterwards furred and brown in the middle, with its point and edges red. The patient moves his head and arms frequently, and appears very restless, though afraid to move his body, from a dread of increasing the pain; his limbs are drawn up towards his belly, and he can only lie on the back. All these symptoms, however, are not present in every case, and they are of course more or less severe, according to the extent and severity of the inflammation: this holds good with regard to all acute inflammatory diseases.

When Inflammation of the Bowels is about to prove fatal, the pulse becomes exceedingly weak, the features shrink, hiccup and cold sweats come on, and the hands and feet become cold; but when it is going to terminate favourably, the pulse recovers

its firmness, the stools become natural, the urine is voided freely, and the pain lessens by degrees.

CAUSES. The most common causes of this disease are, exposure to cold when the body is much heated, or drinking cold fluids when in the same state; accumulation of hardened excrements in the bowels; eating too freely of high-seasoned food, unripe fruit or crude vegetable substances; excess in drinking; too strong purgatives; blows on the belly; swallowing acrid or poisonous substances; but it may come on without any obvious cause. Young people, and those advanced in life, are most liable to this affection, though it may be met with at any age.

TREATMENT. Much can be done within the first twenty-four hours in arresting Inflammation of the Bowels, but if neglected, or if sufficiently active means be not employed at an early stage, the consequences may be very serious. When the disease assumes a formidable appearance from the beginning, the most active treatment is called for; no half measures will be of any permanent service. The most powerful means we possess in checking this disease are general and local blood-letting. The patient should be bled from the arm with as little delay as possible, and the opening made in the vein ought to be large; the quantity of blood to be taken away must depend on the age and constitution of the individual, as well as on the intensity of the inflammation; in general, however, from sixteen to twenty ounces will be required.

A good general rule in drawing blood in urgent cases, is to make the patient sit up, and allow the blood to flow from the arm until he faint, or at least, until he become pale, and feel as if he were about to faint. The apparent weakness and prostration of strength, and the feeble pulse, must not prevent blood-letting, for the pulse will be found to rise after the blood has flowed during some time. Warm fomentations or warm poultices are to be applied frequently over the belly, so as to keep up a proper degree of heat and moisture. A good application for this purpose is warm bran, moistened with hot water, and placed between two pieces of linen. If the pain be not much relieved by the general blood-letting and warm applications, it will be necessary to apply from thirty to fifty leeches round the navel or over the seat of the pain; and when they have fallen off, the

warm bran or fomentations must be again applied. If the symptoms continue to run high after this treatment, it will be advisable to repeat the leeching, for the abstraction of blood is the principal thing we have to trust to at the commencement of the disease, and when boldly used, has generally the effect of overcoming it.

Although there be constipation, as stated above, at the commencement, yet the administration of purgatives would then be improper, inasmuch as they would have no effect in opening the bowels, but might prove injurious by increasing the inflammation. The proper time to give them is after the bleeding has produced a decided effect on the inflammation ; in fact, reducing the inflammation by the abstraction of blood often has the effect of opening the bowels without the aid of any medicine. We must employ remedies to act on the bowels of a mild nature, and in small doses frequently repeated ; a teaspoonful of *castor oil* every hour will in general be found to answer best.

Emollient clysters may be given every three or four hours ; a pint of linseed tea, or the same quantity of barley water or thin gruel, will be sufficient at a time.

The tepid bath, during twenty minutes or half an hour, assists greatly in soothing the pain.

A large blister applied over the belly will be of service after the pain is considerably relieved by the bleeding and other means.

The active treatment above directed will in most cases arrest the progress of the disease, if made use of sufficiently early ; but there is still another method of subduing it, viz., the administration of mercury, which seldom fails when assisted by free blood-letting. *Calomel* is the preparation of mercury commonly used in acute inflammation ; it may be either given alone, or in conjunction with opium, and continued until the mouth become slightly affected. It is decidedly wrong under any circumstance to go on giving mercury after it is ascertained that the system is under its influence, which is sufficiently shown by the gums becoming slightly sore and tender. Profuse salivation puts the patient to a great deal of unnecessary suffering, and is quite uncalled for.

When calomel is given alone, which in our opinion is the best

way of using it in this disease, the dose should not be less than five grains every three, four, or five hours, according to the urgency of the case. When given in combination with opium, it will be found most convenient to administer the medicine in the form of pills, or it may be given in powder, as follows—

No. 53.

Take of calomel, twenty-four grains,
Opium, eight grains,
Extract of liquorice or crumb of bread, a sufficient quantity to form twelve pills. One a dose every second or third hour.

No. 54.

Calomel, two grains,
Dover's powder, five grains, mixed with a little jelly every second or third hour.

Many medical men prefer rubbing in the mercury, instead of giving it internally. When used in this way, a drachm of strong *mercurial ointment* should be well rubbed over the inside of the thighs twice or thrice in the course of twenty-four hours, and the frictions continued regularly until the mouth be slightly affected. This may be considered the best method of using mercury, when there is much irritability of stomach and vomiting.

During the first three or four days the diet must be confined to a little arrow-root, sago, or any dry farinaceous food, and barley or rice-water and linseed-tea, with a little gum arabic dissolved in it as drink.

When the disease has been subdued, the greatest care must be taken to prevent a relapse. Flannel should be worn next the skin, and the diet should be easy of digestion, and as little stimulating as possible. Wine and spirits should be abstained from for a considerable length of time.

The diseases most likely to be mistaken for Inflammation of the Bowels are rupture, colic, and affections of the kidney. Rupture may always be suspected; it is therefore necessary to examine carefully both the abdomen and groin. Colic is a spasmodic affection, and commonly requires to be treated with opium, brandy, and other stimulants; the greatest care must therefore be taken not to confound it with Inflammation of the Bowels, in which stimulants would be highly injurious. Colic

commences suddenly, and is not attended with fever ; the pain is not constant as in Inflammation of the Bowels, and it is rather relieved than otherwise by pressing on the belly. In affections of the kidney, though the patient complain of severe pain in the belly, yet it is not increased by pressure, which is invariably the case in inflammation of the intestines.

CONCUSSION OF THE BRAIN.

Concussion of the Brain generally arises from injury done to the head by blows, or from a violent shock received by the whole body, in consequence of falling from a height. A fall may bring on the worst symptoms of concussion, without the head receiving any external injury. The symptoms resulting from the shock are in proportion to the injury done to the brain. When the concussion is very severe the following are the most marked symptoms : insensibility, without the power of moving, pulse weak, slow, and perhaps intermitting ; cold extremities, oppressed breathing, but without snoring ; pupils of the eyes generally contracted. When to these symptoms are added coldness of the whole body, with short and interrupted breathing, it may then be known that a fatal termination is about to take place. But if the system begin to recover itself and reaction come on, the pulse becomes regular and stronger, the breathing more natural, and the legs and arms get gradually warmer. If the patient be now spoken to in a sufficiently loud tone of voice, he will answer questions, though not very coherently, and if pinched, he will show by moving that he is not insensible to pain. After some time all the symptoms may give way by degrees, until at length the patient is left without any thing to complain of, except perhaps a head-ache. This favourable termination, however, does not always follow reaction, which in some cases is very strong, and accompanied by inflammation of the brain, which in spite of every treatment, may in a short time end in death. Concussion, as above stated, is more or less severe, according to the injury which the brain has sustained. When the shock is slight, and the person only stunned, he remains but a very short time insensible, and then gets up as if nothing had happened ; when more severe, sickness and vomiting follow, and the patient

may have his ideas confused, attended with unwillingness to move about for several hours, or perhaps days.

Concussion sometimes leaves the intellect impaired; the memory, for example, may be partially lost, and the powers of reasoning enfeebled, or the individual may be only rendered incapable of applying himself, as formerly, to any thing requiring much mental exertion.

We are left in doubt with regard to the real nature of concussion, for it is a remarkable fact, that the brain when examined after death shows no change in its structure. In some very severe cases, however, a portion of the substance of the brain is found to have been lacerated by the shock.

TREATMENT. When a person is rendered insensible in consequence of a fall or blow on the head, there is a strong prejudice among people in general in favour of immediate blood-letting. When a sailor, for example, falls on deck from the rigging of a ship and lies in a state of insensibility, with all the alarming symptoms attending Concussion of the Brain, every man on board will at once say that he ought to be bled, and blood-letting will be had recourse to instantly, if the master of the vessel or any one can be found capable of performing the operation. But the blood is no sooner withdrawn than the poor patient rapidly sinks; all hands, however, are quite satisfied that they have rendered him every service in their power, although it might have been almost as well to have thrown him overboard at once, as to have taken blood from him during the first stage of concussion.

All that can be done with safety at first, is to cover the patient well in bed, keep him perfectly quiet, and endeavour to bring heat into his limbs by the application of pieces of flannel wrung out of hot water, and then moistened with spirits of turpentine. Warm cloths may be applied in the same manner over the chest. Mustard poultices or any other warm application will answer the same purpose. When reaction commences, the pulse rises a little, and the extremities gradually become warmer; inflammation of the brain is now to be dreaded; to prevent this, a tea-cupful of blood should be withdrawn, and a purge administered. The patient must still be carefully watched, and if his

pulse become quick and hard and the skin hot, it will be necessary to repeat the bleeding and purging. He must be kept in a dark room and confined to low diet.

INFLAMMATION OF THE BRAIN.

This disease may come on suddenly, but when not caused by external injuries, there are in general certain symptoms which give notice of its approach, namely, head-ache, attended by a sensation of weight and fulness of the head, slight giddiness, ringing in the ears, occasional drowsiness, confusion of ideas, irritability of temper and disturbed sleep. The face is more or less flushed, the head feels hotter than natural, and any unusual noise or strong light annoys the patient. It is unnecessary to enumerate several other premonitory symptoms, inasmuch as they are all very irregular in their appearance, and may precede other diseases as well as Inflammation of the Brain.

After chills or shivering, which in general precedes all inflammatory diseases, strong symptoms of fever come on; the skin becomes hot, the face much flushed, the eyes red, and the pulse full and hard. The patient is then very restless, and light and the slightest noise are insupportable to him. As the disease advances, the thirst becomes urgent, the tongue white, the urine high-coloured, and the bowels constipated. In the majority of cases there is irritability of stomach, accompanied by vomiting. At length spasms of the face and limbs, and the most furious delirium come on, and the pupils of the eyes remain contracted. In many cases it is necessary to confine the patient's arms, to prevent him injuring himself or those near him. One or both arms first and then the legs become stiff and contracted, and occasionally convulsed. When the limbs are in this rigid state, any attempt to straighten them, or even any effort on the part of the patient to move in bed, is attended with severe pain.

The inflammation may now be considered at its height, and if not subdued by timely treatment, another train of still more alarming symptoms, though of an opposite character from the first, make their appearance. The severe feverish symptoms abate, the tongue becomes brown and furred, the violent state of

frenzy subsides, and is followed by low muttering delirium ; the power of speaking and swallowing is much impaired, the urine and faeces are passed involuntarily, a relaxed or palsied state succeeds the stiffness and contraction of the limbs, the pupils of the eyes are dilated, and the patient lies in a complete state of insensibility during some hours previous to death.

If Inflammation of the Brain uniformly assumed the same well-marked symptoms, and went through its stages in the regular manner above described, it could scarcely be mistaken for any other disease : this however is not the case, for it presents a variety of symptoms, and runs its course in a longer or shorter period, according to the age, constitution, and particular disposition of the individual, the part of the brain affected, and the extent and violence of the inflammation. In some cases the most prominent symptom is furious delirium, in others delirium is entirely absent. Sometimes the first stage, or stage of excitement, is short and very little noticed, convulsions being the earliest symptom particularly observed. It happens occasionally after palsy of the limbs has continued some time, that they become suddenly convulsed, and remain stiff and contracted. A state of apparent insensibility may alternate with violent delirium, and it frequently occurs that all the symptoms abate, and the patient appears to be recovering, when he is suddenly seized with convulsions, and the symptoms return with redoubled violence. In fact, the symptoms of Inflammation of the Brain are modified in such a variety of ways, that their irregularity may be said to be characteristic of this disease.

In the majority of cases Inflammation of the Brain reaches its height about the third or fourth day, and generally terminates fatally within a week or ten days. It is one of the most dangerous diseases to which man is liable, and even when it has been overcome, its effects are of the most serious nature ; palsy, imbecility, loss of hearing, or of some other sense, are its common consequences. If none of these bad effects result, it nevertheless predisposes to affections of the brain in after-life. Brain fever may come on at any age, but old people and children are most liable to it, and men more so than women.

CAUSES. The usual causes of Inflammation of the Brain are, injuries done to the head by blows or falls, great mental excite-

ment, exposure to excessive heat or cold, excess in drinking spirituous liquors, suppression of the menstrual discharge, or of the discharge from piles. It often comes on in the course of fevers, rheumatism, small pox, scarlatina, and other diseases of the skin, and may be brought on by certain diseases of the ear.

The diseases with which Inflammation of the Brain is most likely to be confounded are, fever, mania, apoplexy, and delirium tremens. In fever, delirium comes on during its course, and is not a primary symptom, which it generally is in Inflammation of the Brain ; the former disease runs a much longer course, the delirium is not of a furious nature, the pulse is more regular, and there is very seldom rigidity or palsy of the limbs as in the latter. Mania (maniacal insanity) is not attended with fever, and may continue much longer. In apoplexy, the patient falls down suddenly and palsy immediately follows. Delirium tremens arises from hard drinking, is unconnected with fever, the skin is moist, the pulse soft and perhaps weak, the hands shake, the eyes are not red, and the delirium is always connected with suspicion or dread.

TREATMENT. As soon as Inflammation of the Brain is detected, the patient should be placed in an upright position in bed, or in a chair, and bled from the arm. The quantity of blood to be withdrawn must depend on the severity of the inflammation and the strength of the individual. The blood may safely be allowed to flow until the lips lose their colour, and the patient appears ready to faint; and even if he do faint, no harm will accrue. A purgative is then to be given, composed of five grains of *calomel* and twenty-five grains of *jalap*, to be repeated if necessary every three hours, until the bowels are freely opened. The head must be shaved and kept cool with cold lotions of vinegar and water or spirits and water, by means of pieces of linen dipped in the lotion and changed frequently. Ice or snow put into a large bladder and applied in the manner directed in the treatment of apoplexy, is one of the best means of cooling the head. An excellent way of applying cold to the head is by pouring cold water on it from a height, the patient's head being raised and held over a large basin, and the water poured from a watering-pot, a jug, or tea-kettle, during a quarter of

an hour or twenty minutes, or until the head becomes perfectly cool. This process may be employed while the patient is sitting with his feet and legs immersed in warm water, containing mustard. The cold effusions are to be repeated as often as the head becomes hot and the face flushed. The application of cold in any of these ways, if carefully and properly conducted, tends more than anything else to soothe the pain of the head, and calm the excitement, and next to blood-letting is the most useful agent in keeping under the inflammation. If the above treatment do not produce a decided effect on the symptoms, and if the inflammation still continue to run high, it will be necessary to have recourse to a second blood-letting, and afterwards to local bleeding, by the application of twenty to thirty leeches on the sides of the neck and behind the ears, or by cupping at the nape of the neck.

Some practitioners place the greatest reliance on *mercury* in this disease, and give *calomel* from the very commencement of it, in five-grain doses every four or five hours, until the mouth is affected, and when it acts too powerfully on the bowels, they prevent its running off by giving a tablespoonful or two of chalk-mixture after each dose. In general, however, the following mixture will be found preferable when given in doses sufficiently strong to keep up a slight degree of sickness at stomach, without producing vomiting, which would do harm—

No. 55.

Purified nitre, two drachms,
Tartar emetic, six grains,
Water, seven ounces,
Syrup of orange peel, one ounce. Mix.

One or two tablespoonfuls to be given every two hours, or oftener, according as it may be tolerated.

If there be much irritability of stomach, with vomiting, it will be advisable to substitute four drachms of tincture of henbane for the tartar emetic, until the vomiting be completely subdued.

Light and noise must be excluded from the patient's room as much as possible, and while the inflammation continues, the diet should consist of a little sago, arrow-root, or barley-water.

Blisters applied to the head and neck at the beginning of this disease, invariably do harm, by increasing the excitement, but

they may be applied with advantage to the legs and inside of the thighs in the second stage, when the patient is in a state of stupor, with his extremities cold; it is also proper to apply mustard poultices and warm turpentine to the feet, with the intention of restoring heat to the lower extremities, by determining the blood to these parts.

If the tartar emetic mixture do not act on the bowels, they must be kept open throughout the whole course of the disease with *calomel* and *jalap*.

The state of the bladder ought to be particularly attended to, because it sometimes happens that the patient is unable to discharge his urine, and the catheter is required to draw it off.

When the patient is convalescent the diet should be increased very gradually, and the greatest care taken to keep him out of the way of every kind of excitement. A seton may be placed in the nape of the neck if the slightest determination of blood to the head be again observed. Great precaution is necessary to prevent a relapse or return of this disease.

BRONCHITIS.

By this term is meant inflammation of the bronchi, or tubes which convey the air into the lungs.

When the wind-pipe arrives as low down as the third or fourth vertebra of the back, it divides into two great branches, called bronchi; one of which goes to the right and the other to the left lung. These branches having entered the lungs, divide, subdivide, and ramify into innumerable small branches, all of which terminate in very minute bags, called air cells. These air tubes and cells are lined with a membrane, termed from the nature of its secretion, mucous membrane, which is the seat of Bronchitis, a disease said to be more common in this country than any other.

Bronchitis may be considered under two forms, the *acute* and *chronic*.

ACUTE BRONCHITIS. After exposure to cold, which is the usual cause of this affection, the mucous membrane which lines the nostrils, wind-pipe, and bronchi, becomes slightly inflamed. The consequences of this are dryness and stuffing of the nose,

hoarseness, dry cough, and a slight degree of fever, soon followed by expectoration of a thin fluid, a feeling of tightness about the chest, and increase of cough. After some time the expectoration becomes very copious, and of a much thicker consistence ; all the feverish symptoms give way, and in the course of a few days the cough gradually moderates, and the patient recovers. This is a mild form of Bronchitis or " cold on the chest," an affection well known, since there are but few persons in this variable climate who have not experienced it. It is frequently accompanied by cold in the head, is not of a serious nature, and requires very little medical treatment.

Bronchitis, however, does not always appear in this sub-acute or mild form ; it presents a variety of grades, from the slightest *common cold* to the most acute inflammation, causing symptoms of a character so urgent as to require the most active treatment to prevent a fatal termination.

When severe it commonly commences with hoarseness, slight sore throat, perhaps cold in the head, and the feverish symptoms which usually precede all acute inflammatory diseases, viz., chilliness or shivering, alternating with flushes of heat, lassitude, unwillingness to move about, and pain, or at least a sensation of soreness in the back and loins. The pulse is quick and weak, and the urine diminished in quantity. These symptoms are soon followed by head-ache, hot and dry skin, thirst, foul tongue, quick and full pulse, and scanty urine of a high colour. To these general symptoms of fever are added those more peculiar to Bronchitis, namely, oppression on the chest, attended with dull pain and heat, a distressing dry cough, and considerable difficulty in breathing. At first there is no expectoration, because the mucous membrane is dry ; but as the disease advances each fit of coughing brings up a thin acrid fluid of a salt taste. According as the expectoration increases in quantity, it becomes less acrid and loses its salt taste ; it then acquires a thicker consistence, and assumes the appearance of white of egg ; it is very viscid, and sticks to the sides of the vessel. In fact, the more viscid and tenacious it is, the more severe is the inflammation. The feverish and other symptoms become more severe towards evening, and during the night the patient is very restless, and the fits of coughing continue longer and recur more fre-

quently than during the day. About the sixth or seventh day the expectoration begins to grow thicker and more opaque, and the difficulty of breathing and tightness at the chest gradually diminish. At length the expectoration acquires a yellow or greenish colour, and is brought up easily, the sensation of heat within the chest is no longer felt, and the cough is not so frequent or troublesome, except on awaking in the morning, when it continues until the mucus which accumulates in the air passages during the night is freely discharged.

If the acute disease do not pass into the chronic form, it usually ends in the course of twenty or thirty days. It is, however, very irregular in its termination ; the patient may be restored to health at any period, varying from ten days to six weeks.

Bronchitis seldom terminates fatally unless complicated with other diseases; but when it attacks a great part of the mucous membrane of the air passages of one or both lungs, and extends to the smallest air tubes, it is not unattended with danger, and in old people and children frequently proves fatal. In such cases the breathing becomes much oppressed, a wheezing or rattling noise is heard in the chest, and there is great prostration of strength. The mucus goes on accumulating in the air passages, and the patient has no longer strength to cough it up ; the face and lips then change from deadly pale to a livid colour, the pulse is small and quick, cold clammy sweats break out on the body, the extremities become cold, and the patient sinks.

CHRONIC BRONCHITIS (*or Winter-cough*) is almost invariably the result of the acute form, and is generally met with among old people, and those of weak habit of body. It commences in most cases towards the end of autumn, continues during winter, and is seldom got rid of until the end of spring. The cough may go on in this manner for years, getting worse every winter. It may be said to differ from the acute form merely in the mildness of its symptoms and longer duration. There is cough and profuse expectoration of an opaque, white, yellow, or greenish matter, of a loose consistence, not resembling the viscid discharge of the first stage of the acute form. In many cases there is a slight degree of feverish excitement during the day, which increases a little towards night ; but fever is not a characteristic symptom of the

chronic form, unless in the worst cases, when it comes on in the evening, followed by night-sweats and other hectic symptoms. The cough is most troublesome during the day, and on awaking in the morning it continues for an hour or two, followed by very copious expectoration. One may labour under chronic Bronchitis for years without the general health being much impaired, but in most cases, when it persists for a considerable length of time, habitual shortness of breathing is produced, with wheezing and more or less oppression in the chest; and these symptoms are aggravated on going up stairs, or in using any particular personal exertion. People so affected are then said to be asthmatic, and in fact Bronchitis in the chronic form is frequently connected with asthma, and is by no means an uncommon cause of it. With many persons chronic Bronchitis is of so mild a character that they scarcely consider it a disease: in other cases again, the patients are completely worn out by the cough and excessive expectoration. They lose their appetite, become weak and emaciated; hectic fever, with night-sweats and purging, come on, and they die with all the apparent symptoms of consumption.

CAUSES. The great extent to which Bronchitis prevails in this country, is no doubt owing to the sudden changes of temperature, and the cold and moist atmosphere to which we are exposed. It is comparatively rare in countries where the air is cold and dry, or hot and dry, as in Russia or within the tropics; whereas in Holland, where the climate resembles our own, there is no disease more common.

Persons with soft flesh, full plump body, white skin, fair hair, pale or delicate rosy countenance, with habitually languid pulse, appear to be more subject to this disease than others. Old people and children are very liable to it, and men are said to be more frequently attacked by it than women. It is also certain that the oftener an individual is attacked by Bronchitis the more obnoxious he becomes to the disease.

A most fruitful cause of Bronchitis is exposure to cold after the body has been heated by exercise or sitting in a warm room: this seems to be understood by every one, but it does not appear to be so well known that cold is caught just as readily by changing suddenly from cold to warm air. A person, for example, after taking exercise in the open air, suddenly enters a

warm apartment, and sits near the fire ; some time after he feels a dryness in his nostrils and throat, a sensation of coldness in his back, with chills and irregular flushes of heat, and indeed all the symptoms of approaching cold, which he ascribes to having been out in the cold air, whereas the direct cause was from breathing hot air, and sitting near the fire after having been out. When the body has been chilled by long exposure to cold, warmth ought to be restored by degrees ; hence when a person has been in the air, he should rather remain for some time in a room moderately heated, and avoid sitting near the fire, than approach it too suddenly. By avoiding sudden changes of temperature any one, however susceptible of catching cold, may take exercise with impunity in the coldest air, provided the surface of the body and feet are kept warm by suitable clothing. Giving up wearing flannel or other winter clothing too soon was considered by the celebrated Sydenham as one of the most common causes of diseases of the chest in this country, and every body knows how frequently the lungs suffer in consequence of our wearing wet or damp clothes, and from exposure to currents of air.

Inflammation of the lungs is distinguished from Bronchitis by the shivering which ushers in the former being more severe, and the fever following it of longer continuance, by the fixed pain in a particular part of the chest, and by the expectoration, which is from the commencement of a rusty or reddish colour, in consequence of being mixed with blood. The symptoms of pleurisy differ from those of Bronchitis, inasmuch as in the former the expectoration is scanty and frothy ; the pain in the chest acute and confined to one side, and at the commencement to a particular spot, which, as in inflammation of the lungs, is increased by attempting to take in a full inspiration. Croup and hooping-cough are not so likely to be mistaken for Bronchitis. Croup is easily known by the great difficulty in breathing, the peculiar hoarse or husky voice, the shrill and clanging cough, the severity of the febrile symptoms, and by the pain being increased upon pressing the wind-pipe. Hooping-cough comes on slowly, and is seldom accompanied by fever : each fit of coughing is followed by a peculiar whoop or crowing sound ; there is no wheezing, and the fits of coughing frequently terminate in vomiting.

Since the invaluable discovery of *auscultation* or the use of the *stethoscope*, by the celebrated French physician, M. Laennec, medical men have been able to detect diseases of the chest, and distinguish them from each other with a degree of accuracy truly surprising. This invention, in fact, must be considered the greatest achievement of modern medicine, and since the brilliant discovery of vaccination by Dr. Jenner, the science of medicine can boast of no other to be compared with it. There are some medical men who rail against the stethoscope, and do their utmost to turn it into ridicule, though by so doing they give decided proof of their own ignorance of its use, for the intelligent part of the profession are well aware that no one thoroughly conversant with the use of this instrument can hold it in contempt, or do otherwise than esteem it as a medium through which diseases of the chest may be investigated, and their nature and seat ascertained with a facility and accuracy that could never be arrived at by the ordinary symptoms.

Another and more numerous class of practitioners, unwilling to appear less wise than their neighbours, pretend to a knowledge of auscultation, while they are scarcely, if at all, acquainted with it: this however is a species of quackery which is fortunately in a great measure harmless. Diseases of the chest may, for the most part, be distinguished from each other without the aid of the stethoscope, but cases are met with daily, in which without having recourse to it, we would find it impossible to form a correct *diagnosis*, or in other words, to distinguish one disease from another resembling it. For example, there was nothing more common formerly than to mistake the chronic form of the disease now under our notice, which may be cured, for pulmonary consumption, which is incurable, and this error often led people to suppose that they had recovered from consumption, when in fact they had been only labouring under chronic Bronchitis. The notorious quack, St. John Long, who pretended to cure consumption, no doubt succeeded by the process of counter-irritation which he adopted, in restoring many persons to health who had been suffering from chronic Bronchitis; but in all cases of confirmed consumption, his treatment only tended to hasten the death of the unfortunate individuals who were credulous

enough to place themselves under his charge. It would be wandering out of the limits of our province to give any instructions with regard to auscultation, the knowledge of which must ever be confined to the profession, inasmuch as it requires extensive practice, years of close attention, and the greatest patience, before one can acquire a correct knowledge of it, which, when once arrived at, becomes a sure guide in the investigation of diseases of the heart and lungs, and gives the stethoscopist a vast superiority over those who are ignorant of auscultation.

TREATMENT. *Acute Bronchitis.* A very high authority in pulmonary complaints, Laennec, recommends at the commencement of all cases of *common cold*, an old, popular and comfortable remedy, which he found to be more serviceable than any thing else, namely, *hot punch* or negus at bed-time, and bathing the feet in hot water. This treatment is so well known, and produces the desired effect so frequently, that there is very little chance of its losing its popularity. People ought, however, to bear in mind, that the use of these stimulating beverages is not unattended with risk, for if they do no good they will certainly do either more or less harm, by increasing the inflammation.

The following treatment, though not so attractive as the hot punch, if had recourse to sufficiently early, will in general arrest the progress of a cold. The patient having bathed his feet in hot water, should go to bed early, and then take a basin of thin warm gruel, barley-water, or some other warm drink, and three grains of *calomel* with six grains of *James's powder*, or three grains of *James's powder* with fifteen grains of *Dover's powder* in a little jelly, to be followed early the next morning by a dose of *Epsom salts*, or the black draught. (See page 32.) If he perspire during the night and the purgative operate freely in the morning, the cold will in all probability be checked, and all that is necessary afterwards is to remain in the house a day or two, avoid animal food, and drink nothing stronger than tea or barley-water. If a cold be neglected at the commencement, or if the above treatment fail in putting a stop to it, cough comes on, and the complaint runs its course. If it be of a mild character, very little medical treatment will be required: the patient must wear warm clothing, remain at home as much as possible, avoid changes

of temperature, live sparingly, and abstain from all stimulating liquors. To relieve the cough and assist expectoration, the following mixtures may be found useful—

No. 56.

Squill vinegar, an ounce and a half,
Tincture of henbane, two drachms,
Mucilage of gum arabic, two ounces and a half,
Syrup of orange peel, honey, or common syrup, an ounce and a half,
Peppermint-water, six ounces. Mix. A tablespoonful to be taken four or five times in the course of the day, or at any time when the cough is troublesome.

No. 57.

Almond emulsion, eight ounces,
Acetate of morphia, half a grain. Mix. A tablespoonful of this mixture is to be taken four or five times a day, and two tablespoonfuls at bed-time.

No. 58.

Almond oil, half an ounce,
Solution of the carbonate of potash, half a drachm,
Syrup of tolu, an ounce,
Syrup of poppies, an ounce,
Water, five or six ounces. Mix. A dose of two tablespoonfuls to be taken several times in the course of the day, or when the cough is troublesome.

Bronchitis demands a more energetic treatment when it begins with shivering, followed by a considerable degree of fever, with difficulty of breathing, and a feeling of tightness and oppression in the chest. To stop the inflammation, or in other words, to prevent the disease running a certain course, is in general, if not always, impossible; but a great deal can be done to keep it within bounds, and thereby allow us to conduct it to a safe termination. To effect this our most powerful agent is blood-letting; a vein ought therefore to be opened without delay, and the precaution already given to make the patient sit up while the blood is flowing should not be forgotten. When the strength of the pulse abates and the countenance begins to change, the arm must be bound up.

The bowels having been freely opened by means of five grains of *calomel*, and twenty or twenty-five grains of *jalap*, the *tartar emetic mixture* (see page 76) is to be given regularly, or a

tablespoonful of the following mixture may be administered every hour, or to such an extent as to cause slight nausea, without producing vomiting—

No. 59.

Tartar emetic, two grains,
Ipecacuan in powder, a scruple,
Oxymel of squills, half an ounce,
Water, three ounces. Mix.

These mixtures, if carefully and properly given, prevent reaction coming on after blood-letting, and in general render further depletion unnecessary.

When no prejudice exists against *mercury* in the treatment of inflammatory diseases, it may be used with the greatest advantage in place of the lowering treatment by tartar emetic. To subdue inflammation in acute Bronchitis, the best form of giving it is the following—

No. 60.

Calomel, two grains,
James's powder, three grains,
Dover's powder, five grains. Mix. To be given as a dose every six hours or oftener, according to the urgency of the case, until the system become slightly under its influence.

Counter-irritation, by means of the *tartar emetic ointment*, used in such a manner as to produce a pustular eruption as quickly as possible, will be found very serviceable. Immediately before the ointment is rubbed in, the chest should be well rubbed with a flesh brush or rough towel until the skin become red. The ointment, when intended to act quickly, must be made as follows—

No. 61.

Tartar emetic, one part,
Spermaceti ointment or lard, two parts. Mix.
About the size of a nutmeg to be used at a time.

The eruption should be kept up during two or three weeks by rubbing in a little of the ointment daily.

When the acute stage of the disease is over, and the fever subdued, the difficulty of breathing and oppression at the chest

generally continue, and the cough is very harassing. The object now is to allay irritation, by using means to moderate the cough and facilitate expectoration: for this purpose an anodyne should be given every night at bed-time, in conjunction with an antimonial, in any of the following forms—

No. 62.

Acetate of morphia, a third of a grain, or half a grain,
James's powder, three grains. Mix. To be given in a little jelly.

No. 63.

Extract of hemlock, five grains,
Kerme's mineral, three grains. Mix, and form into two pills, to be taken as a dose.

No. 64.

Battley's opiate, twenty-five drops,
Tartar emetic, a quarter of a grain. To be mixed with a little barley water.

During the day any of the cough mixtures (see page 84) may be taken, or the following expectorant pill—

No. 65.

Extract of hemlock, thirty-six grains,
Squills in powder, twelve grains,
Ipecacuan in powder, six grains. Mix, and form into twelve pills; one to be taken as a dose three or four times a day.

When there is debility to such an extent as to render the patient unable to expectorate, and no symptoms of fever present, the following mixture or pills may be had recourse to, care being taken at the same time to keep up the strength by beef tea, strong soup, and a moderate quantity of port wine—

No. 66.

Gum ammoniac, two drachms,
Mucilage of gum arabic, an ounce, to be dissolved in peppermint-water, four ounces.

No. 67.

Paregoric elixir, three drachms,
Subcarbonate of ammonia, half a drachm,
Honey, syrup of marshmallow, or any other syrup, two teaspoonfuls. Two tablespoonfuls a dose, to be repeated twice or thrice a day.

No. 68.

Camphor, three grains,
Carbonate of ammonia, three grains,
Ipecacuan in powder, one grain,
Extract of hemlock, three grains,
Extract of liquorice, a sufficient quantity to form three pills; to be taken as a dose, and repeated twice or thrice a day, or according to the urgency of the case.

Great attention must be paid during the whole course of the disease, to keep the patient's apartment as nearly as possible at a uniform and moderate temperature.

Purging is unnecessary, but the bowels are to be kept moderately open by an infusion of senna leaves in combination with a little manna and Epsom salts.

The diet at the commencement must be very sparing and confined to a little sago, arrow root, or chicken broth; but when the febrile and inflammatory symptoms have subsided, it may be more generous, and regulated according to the strength of the patient.

In *infancy* there is no disease, except inflammation of the lungs, more common than Bronchitis. In very young children it often advances to a state of great danger before it is detected, and then the most judicious treatment is frequently found of no avail.

A very important part of the treatment of Bronchitis in children is local bleeding, by the application of three or four leeches applied over the chest at the onset of the disease. Emetics are very serviceable; they assist in evacuating the air passages of the mucus which collects in them, and also rid the stomach of the phlegm which young children generally swallow instead of spitting up; five grains of *ippecacuan* in a little water form the most suitable emetic. The best laxatives are *rhubarb* and *magnesia* in small doses, a teaspoonful of *castor oil* or a little *manna*. Much benefit may be derived from counter-irritation by means of mustard poultices to the chest, or by the application of pieces of flannel wrung out of hot water, and then moistened with spirits of turpentine; either of these applications may be repeated frequently, and kept on until the skin become red. Small doses of *calomel* and *ippecacuan*, a quarter of a grain of

each every three or four hours may be given, or a constant state of nausea may be kept up by giving two teaspoonfuls of the following mixture every half hour, or in doses proportioned to the age of the child and violence of the inflammation—

No. 69.

Tartar emetic, two grains,
Tincture of squills, fifteen drops,
Water, four ounces,
Syrup or sugar, a sufficient quantity to sweeten the mixture.

Opiates given to make the little patients sleep are very dangerous, because the cough is necessary to bring up the mucus from the air passages, which might otherwise accumulate and cause suffocation; they ought also, for the same reason, to be avoided in old people, and in all cases where there is much debility, with a copious secretion from the mucous membrane of the bronchi.

Bronchitis often comes on in a very insidious manner in infants; another opportunity will, therefore, be taken to describe minutely the symptoms in such cases.

TREATMENT OF CHRONIC BRONCHITIS. The debility which attends this affection renders both general and local blood-letting improper; without the greatest caution it cannot be resorted to even when acute Bronchitis supervenes upon the chronic form, a complication which always constitutes a very serious case. The acute form, in such case, is announced by considerable diminution or a total cessation of expectoration, great difficulty in breathing, and the usual train of febrile and inflammatory symptoms; it is very difficult to manage, and frequently in old people and debilitated subjects, goes on rapidly to a fatal termination, in spite of every effort to arrest its progress.

There is no remedy of more service in *winter cough* than counter-irritation, by the frequent application of blisters over the chest, or the long-continued use of tartar emetic ointment. (See page 26.) Issues and setons are also of great use when the patient has sufficient strength to bear them. The application of a tartar emetic plaster is a very harsh method of producing counter-irritation; it gives severe pain, and often causes a deep ulcer, which when healed leaves an ugly-looking scar. Many

practitioners prefer stimulating embrocations to any other plan; the following are in common use—

No. 70.

Opodeldoc, three ounces,
Turpentine, two ounces,
Soap, two drachms. Mix. To be used once or twice daily.

No. 71.

Tincture of Spanish flies, and
Camphorated spirits of wine, of each two ounces. Mix.
Part of this embrocation to be rubbed over the chest night and morning.

The treatment of *winter cough* by the constant use of cough mixtures, composed principally of expectorant remedies, such as squill, ammoniac, &c., seems quite uncalled for, since, by increasing the expectoration, already too profuse, they can only tend to debilitate and weaken the patients. These mixtures no doubt relieve the cough to a certain extent, but this effect appears to arise, not from the expectorants, but from the laudanum or other anodyne remedies which are usually combined with them. The severity and frequent recurrence of the fits of coughing keep up a constant state of irritation of the lining membrane of the air passages: small and frequently repeated doses of anodyne remedies should therefore be administered to mitigate the cough, and thereby diminish the irritation; and though this treatment can only be considered as palliative, it gives considerable relief. We ought to remember that every anodyne medicine loses its effect after a time, consequently it becomes necessary either to increase the dose, or have recourse to another remedy of the same class.

No. 72.

ANODYNE COUGH MIXTURES.

Acetate of morphia, a grain, dissolved in a little almond oil,
Almond emulsion, three ounces,
Camphor mixture, the same quantity,
Mucilage of gum arabic, half an ounce. Mix. A tablespoonful to be given as a dose three or four times in the course of the day.

No. 73

Extract of hemlock and extract of henbane, of each five grains,
 Mucilage of gum arabic, two drachms,
 Spirit of mindererus (solution of the acetate of ammonia), half an ounce,
 Peppermint-water, or common water, six ounces,
 Syrup of red poppy, a drachm. The two first ingredients to be well mixed
 with the mucilage before the others are added. A tablespoonful a dose, three
 or four times a day, or at any time when the cough is troublesome.

Cases of chronic Bronchitis are occasionally met with, in which there is a certain degree of inflammation approaching the subacute form; sparing diet, abstinence from fermented liquors, purging, and the usual lowering treatment, are then indicated, but in general an opposite mode of treatment must be adopted. The strength should be supported by diet consisting of fowl and fresh beef or mutton, along with a moderate quantity of wine or sound malt liquor. Much benefit is also derived from tonic remedies, of which quinine and the preparations of iron are the most to be depended on.

No. 74.

Sulphate of quinine, twelve grains,
 Myrrh, twenty-four grains,
 Ipecacuan, twelve grains,
 Syrup, a sufficient quantity to form twelve pills, three of which are to be taken in the course of the day.

Instead of these pills, two or three grains of the *sulphate of iron* (green vitriol), or ten drops of *tincture of steel*, may be given twice or thrice a day.

When Brochitis is connected with asthma, the greatest benefit is sometimes derived from prussic acid in conjunction with lobelia inflata.

No. 75.

Prussic acid, two drops,
 Tincture of lobelia inflata (Indian tobacco), twelve drops,
 Infusion of roses, an ounce. Mix. To be given as a dose, and repeated twice or thrice daily.

When Bronchitis comes on several winters in succession, and the general health becomes impaired in consequence, nothing will be found more beneficial than a residence in a warm

climate. Sometimes it happens that living in certain localities keeps up the disease; in such cases a removal, even to a short distance, will do more good than medicine.

To prevent the recurrence of Bronchitis, the patient should guard against changes of temperature as much as possible, take regular exercise in the open air, attend to the state of his bowels, and wear flannel next the skin. Sponging the chest every morning with sea water, or cold water containing a portion of salt, and in summer bathing in the sea, and the shower bath, are also excellent means of keeping off Bronchitis. (See the Treatment of Asthma.)

BRONCHOCELE.

Bronchocele is a swelling on the fore part of the neck, caused by a preternatural enlargement of the thyroid gland; in this country it is generally called *Derbyshire neck*, and in France and Switzerland is known by the name of *goitre*. The swelling, in its simple state, presents a smooth surface, the skin which covers the tumour is not discoloured, and is neither painful nor tender when touched. Sometimes the tumour is confined to one side of the neck, and it has been remarked that the right side of the gland is more frequently enlarged than the left. In the more complicated cases the neighbouring parts become affected, and the swelling sometimes increases to a great extent, causing a shocking deformity; in some individuals it hangs down over the upper part of the breast, and in others it rises as high as the ears. When the tumour is large it presses on the wind-pipe, and thereby causes a degree of hoarseness of the voice, and impedes the breathing; the jugular veins being also compressed, the free circulation of the blood in the head cannot be carried on, and the consequences are head-ache, drowsiness, giddiness, and sometimes apoplexy. Bronchocele of long standing and considerable size is usually of unequal consistence; one part of it feels soft and spongy, while another is firm or even hard. It has not unfrequently a lobulated or knotted appearance, and the skin covering it acquires a yellowish colour. The matter contained is of various descriptions, and is generally lodged in numerous small cells; sometimes it is transparent and viscid, or may resemble

honey or cheese ; in some cases the tumour is partly composed of gristle or bone.

Bronchocele is very seldom attended with danger ; it may continue for years, and even throughout life, without causing pain or much inconvenience. There are no doubt cases occasionally in which inflammation comes on ; the tumour then becomes hot and painful, the skin covering it assumes a red and shining appearance, and the veins running under the skin are much enlarged. In scrofulous persons matter has evenⁿ been known to form and find vent externally. Scrofula, however, does not appear to be particularly connected with this disease.

Females are most liable to Bronchocele : it is rarely met with in this country in the male sex, though puny boys, of delicate constitution, are sometimes affected with it. It usually commences in children about ten or twelve years of age, but occasionally appears earlier, and some infants are born with the disease. In Derbyshire Bronchocele appears to be *endemic* (i. e., prevails in consequence of some cause peculiar to the country) ; and is also very common in some parts of Sussex, Hampshire, and Nottinghamshire.

CAUSES. The various opinions started respecting the cause of Bronchocele, when closely examined, appear so doubtful and contradictory, that we are left, after all the inquiries and observations made with regard to it, as ignorant of its origin as we are of the use of the thyroid gland, where the complaint is seated. Dr. Mason Good, a physician of superior discernment and great experience, committed an error in attributing the cause of Bronchocele in Derbyshire to the consumption of *oaten cake* among the poor people, since it is well known that in Scotland, where the food of the common people is principally oatmeal, this disorder is scarcely known. Drinking snow-water has been supposed to be the cause of Bronchocele ; in refutation of this opinion it is adduced that it is unknown in the highlands of Scotland and in Westmoreland, though there is more snow there than in Derbyshire, where the disease is endemical. It is also known that it is not so common in the parts of Switzerland where the inhabitants drink snow-water, as in other districts of that country where snow-water is never used. Moreover, it is prevalent in the island of Sumatra,

and in some parts of India, where snow is never seen. Mungo Park observed it among the Negroes in Barbary, Baron Larrey saw it frequently in Egypt, and the celebrated traveller, Humboldt, mentions that he met with it in some of the hottest parts of South America. We have seen it within the tropics, both among Negroes and Caribs, and have looked for it in vain in the arctic regions, among several tribes of Esquimaux, who drink only snow-water. Bronchocele is also said to arise from drinking hard water, but this theory has been refuted by analyzing the water in Nepaul and in some parts of South America, where the complaint prevails to a great extent; the fluid used for drink has not been found impregnated with earthy or mineral substances, to an extent sufficient to account for this disease. In fact, it has been distinctly shown to be common in countries where the people drink soft water not impregnated with lime or mineral substances. The French and Italian authors, who have written the best treatises on this disease, maintain that it is caused by breathing moist air, charged with emanations from the soil, particularly in low, close, marshy valleys, so surrounded by mountains, that the air cannot circulate freely, and that in dry elevated situations it is not endemic and almost unknown. On the other hand, Mr. Bramley and Captain Turner state that Bronchocele is common in the villages situated among the mountains which skirt the great valley of Nepaul, at the height of from five hundred to two thousand feet above the level of the valley; and that they have seen it in families residing on or near the summits of mountains seven thousand feet above the level of the sea. Humboldt likewise states that it prevails among the inhabitants of the extensive plain of Bogota, six thousand feet above the bed of the river Magdalen, and also that it is by no means uncommon on the flat elevated regions of the Cordilleras. There is sufficient evidence to show that it does not depend on the quality of food; the disease is met with among rich and poor, in the localities in which it prevails, and cases may be seen in every country and climate. The inhabitants of large towns are not altogether exempt from Bronchocele, which is however comparatively rare among them. The various causes which have been supposed to give rise to it may probably predispose the system to be acted upon by some unknown agent peculiar to the

localities where it is endemic; but it seems evident that not one of them has alone the power of producing this affection. It is without doubt hereditary, and is certainly most prevalent among the inhabitants of mountainous countries, in the Alps, Pyrenees, Apennines, Cordilleras, and the Himalaya mountains, as well as in the valleys of the hilly countries surrounding them. It has been remarked that Bronchocele in females often increases in size during gestation, and that in many cases it has become much enlarged, in consequence of difficult labour; indeed, many females date the commencement of this disease from their first *accouchement*. To account for this, several theories have been formed, concerning which it is unnecessary to enter on any detail, since they can only be of interest to medical men. The state of idiocy called *cretinism*, is common in certain districts of Switzerland and other countries, in individuals affected with Bronchocele, but whether or not this combination be accidental remains undecided. *Cretins* have been seen in Switzerland and *cagots* among the Pyrenees, without Bronchocele; and certainly there is nothing more common than to find people with extensive Bronchocele, whose intellectual faculties are in no way impaired.

TREATMENT. Until of late years we were as ignorant of any effective method of treating Bronchocele as we are at present of its nature and origin. We are now, however, acquainted with an invaluable remedy, iodine, which, if judiciously used, particularly when the individual is removed from the locality where this disease prevails, may be said to cure it in the majority of cases. Burnt sponge was formerly in high repute, but since the discovery of Dr. Coindet, of Geneva, that it owes its virtue to the iodine which it contains, sponge has been very little used in this country. The power possessed by iodine in overcoming Bronchocele is such, that Dr. Manson, of Nottingham, states, that out of one hundred and twenty cases which came under his charge, seventy-nine were cured, eleven greatly relieved, and two only derived no relief from it. This remedy should be given in small doses frequently repeated; it is then perfectly safe, but if given in too large doses, or carried too far, it brings on lowness of spirits, loss of appetite, dimness of sight, nervous irritability, and palpitation of the heart, or it may irritate the stomach and produce purging. If the patient com-

plain of heat of the stomach and griping, the iodine should be discontinued for a day or two, or the dose may be diminished; these effects, however, are very seldom produced when the following preparation is given, according to the manner directed—

No. 76.

Hydriodate of potash, thirty-six grains,
Iodine, ten grains,
Distilled water, ten ounces. Mix. The dose of this mixture is five drops three times, which is to be gradually increased to twenty or thirty drops.

As an external application, Dr. Coindet recommends the following ointment—

No. 77.

Hydriodate (or iodide) of potash, half a drachm,
Lard, an ounce to an ounce and a half. Mix. A drachm of this is to be well rubbed in over the surface of the tumour night and morning.

Dr. Manson prefers a liniment composed of

No. 78.

Tincture of iodine, a drachm,
Compound soap liniment, an ounce. Mix.

In some cases the skin covering the tumour is irritated by the iodine ointment, and a considerable degree of inflammation takes place. When this accident occurs, the ointment should be discontinued, and the inflammation reduced by the application of six or seven leeches to the part, to be followed by warm bread or linseed poultices.

In some cases Bronchocele yields to iodine in the course of a month or two, in others it is necessary to keep the system under its influence during ten or twelve months before a cure can be effected.

A seton placed in the skin over the Bronchocele has sometimes the effect of curing it when iodine fails; but if the tumour be very hard or partly ossified, neither of these remedies produces any good effect. There is no necessity for confining the patient to low diet during the treatment with iodine; on the contrary, the diet ought to be of a sufficiently substantial and nutritive quality, since this disease generally occurs in delicate females of relaxed constitutions. It ought to be remarked that Bronchocele

has disappeared entirely in many cases particularly in young people, from change of residence alone; in others it has been cured by simply rubbing the tumour two or three times a day (a quarter of an hour or twenty minutes each time) with a dry towel, and rubbing in a little camphor liniment has been frequently known to produce the same effect. The swelling must be always carefully covered, so as to prevent its being acted on by sudden changes of temperature.

BRUISES.

By the term Bruise or contusion is meant an injury of the soft parts from a blow, or from violent compression, the skin remaining undivided. When a Bruise is accompanied by laceration of the skin, it is called in surgical language a *contused wound*. A slight Bruise is of little consequence, and requires no particular attention; but when severe, it demands proper treatment, in order to prevent the consequences which might otherwise result. A severe Bruise is followed by swelling and discolouration of the injured parts, arising from the bursting of numerous small blood-vessels, and the consequent effusion of blood into the cellular or fatty substances situated beneath the skin. The sudden discharge of blood in this manner is well exemplified when a blow is received on the eye, which causes almost immediately what is commonly called a black eye. The dark or livid colour of a bruised part changes after some time to a dirty green, then to copper-coloured or yellowish tints, until at length the skin regains its natural appearance. These changes of colour are caused by the gradual absorption of the effused blood. The extensive discolouration which in many cases arises from a Bruise alarms some patients; this is however a favourable sign rather than otherwise, because the effused blood being spread over a large surface, is absorbed the more readily, whereas, when it is confined within a small compass, absorption goes on slowly, perhaps not at all, and may thereby cause inflammation. Danger arises in consequence of blood escaping from the vessels in particular situations, and not from the quantity dis-

charged ; hence a small quantity effused into the brain, in consequence of a blow on the head, or into the chest or belly from a similar cause, will endanger life and probably cause death, while a large quantity thrown loose under the skin, causing extensive discoloration, may be rapidly absorbed without much inconvenience to the patient. The consequences of a blow are more or less serious according to the nature of the part on which it is inflicted. A severe blow, for example, received on a large joint always produces serious consequences, and a blow on the lower part of the belly may burst the bladder, if it happen to be distended with urine at the time, and cause death.

The effusion of blood under the skin is not the only effect of a Bruise ; the muscles and other soft parts are generally injured, and remain in a weak and painful state during a longer or shorter time, according to the severity of the injury ; or they may be so destroyed as to deprive them of life ; in this case sloughing, as it is called, or the separation of the dead parts from the living, must take place.

TREATMENT. The first thing to be attended to in treating a Bruise, is to prevent inflammation coming on ; for this purpose cold lotions are to be constantly applied to the parts, and the sooner they are employed after the injury has been received the better, because, when resorted to early, they are not only useful in keeping off and subduing inflammation, but tend also to prevent the further effusion of blood from the lacerated vessels. The best lotions are those in common use, namely, Goulard water and vinegar, or spirits and water. When the Bruise is slight, and the injured parts kept at rest, no other treatment than this will be required. But if inflammation come on in consequence of a severe Bruise, a more energetic treatment becomes necessary ; leeches ought to be repeatedly applied, low diet strictly adhered to, and the bowels freely opened by occasional doses of Epsom or Glauber salts, or other cooling purgatives. It is scarcely necessary to mention the propriety of quietude, since the slightest motion of the injured parts increases the pain so much, that the patient is compelled to remain at rest. The inflammation which arises from a Bruise seldom terminates in suppuration, but, if it cannot be kept under, and the formation of matter appears

inevitable, the cold lotions should be discontinued, and warm poultices applied. (See *Abscess*.)

If the above means have had the effect of preventing or subduing inflammation, the indication then is to promote the absorption of the blood effused under the skin, and at the same time to strengthen the bruised parts and restore them to a healthy state. This is effected by friction with opodeldoc, the compound camphor liniment, or the following embrocation—

No. 79.

Sal-ammoniac, half an ounce,
Vinegar and spirits, of each twelve ounces. Mix.

The pumping of cold water, or the pouring of it from a height, on the bruised parts, two or three times a day, is a popular remedy, and one of the best that can be used. Pressure by the application of a bandage rolled round the parts is also an excellent method of promoting absorption of the effused blood, or in other words, of doing away with the discolouration. It ought to be observed, however, that the employing of these stimulating applications, before the inflammation is entirely subsided, would be highly improper. A common, though a decidedly wrong practice, is to apply leeches, when there is no inflammation present, under the mistaken idea that they abstract the effused blood; but instead of doing any good in this state of the parts, they would only tend to increase the weakness of the skin which the injury has caused, or their bites might give rise to extensive inflammation.

BUCHU LEAVES.

The Dutch were the first to introduce Buchu-leaves into Europe from the Cape of Good Hope, where the plant which yields them grows. They have a strong odour, rather fragrant than otherwise, and have much the appearance of senna-leaves. Sir Benjamin Brodie and other distinguished medical men, speak highly of the benefit derived from them in certain affections of the bladder. (See *Catarrh of the Bladder*.) They are useful in gleet, and certainly have an excellent effect in strengthening the digestive organs.

The leaves of the Buchu are given in the forms of infusion and tincture. The *infusion* is made in the following manner:—Take of Buchu-leaves, an ounce, boiling water, a pint; macerate for four hours in a lightly covered vessel, and then strain through a piece of linen. Two or three tablespoonfuls to be taken as a dose three or four times a day.

The *tincture* is thus made: take of Buchu-leaves, two ounces, proof spirit, a pint; macerate for seven days. Three or four teaspoonfuls a dose, in a little water, three or four times daily.

BUNYONS.

A Bunyon is a swelling on the inside of the first joint (or ball, as it is commonly called) of the great toe, caused by the pressure of tight boots or shoes. The same term, however, is sometimes applied to a similar swelling on the first joint of the little toe, or on the instep. Those who are troubled with Bunyons have generally the great toes turned outwards, and the little toes inwards, to an unnatural extent. This may be said to arise almost invariably from wearing boots or shoes too narrow at the extremities, or in other words, too pointed, thereby causing the toes to be squeezed against each other, and kept in an improper position.

TREATMENT. Since a Bunyon is caused and kept up by undue pressure, the principal indication in attempting to cure it is of course to prevent the part as much as possible from being pressed upon. The necessity therefore of wearing boots or shoes of sufficiently large size is obvious. They should be without high heels, which would cause improper pressure on the fore part of the foot, and made of cloth or of buck-skin, or some other soft leather, and so constructed as to allow ample room at the parts corresponding to the Bunyons. Advice of this nature, however, is of course not likely to be attended to by ladies and others whose vanity leads them to suffer pain rather than not display a small and neat foot.

When a Bunyon is not inflamed, the pressure may be in a great measure removed by applying over it and the surrounding parts a piece of thin linen or silk, spread with diachylon plaster, and over the latter a piece of thick buck-skin leather of the same

dimensions, likewise covered with diachylon, perforated with a hole of the size of the Bunyon: the pressure is thus removed and thrown on the adjacent parts. This method of treatment may be assisted by having the sole of the shoe considerably thicker towards the inside of the foot.

Wearing a new shoe, or one tighter than usual, much walking, particularly in warm weather, or other causes, may bring on inflammation in the Bunyon, which then becomes so painful that the slightest pressure cannot be tolerated. The treatment in this case consists in the employing of warm linseed poultices and warm fomentations, and the application of leeches to the surrounding parts. But it sometimes happens that these remedies do not answer the purpose of checking the inflammation; matter then forms, and the lancet is required to give vent to it. The application of iodine ointment, prepared as follows, has often an excellent effect in relieving an inflamed Bunyon—

No. 80.

Iodine, twelve grains,
Lard, or spermaceti ointment, half an ounce. Mix.

A small portion of this ointment (about the bulk of a horse-bean) is to be rubbed gently on the Bunyon twice or thrice a day.

BURNS AND SCALDS.

It is unnecessary to define these terms, since every one knows what is meant by them.

Burns are usually divided into four varieties or degrees.

In the *first* degree there is redness, slight swelling, heat and acute pain of the part. These symptoms continue a few hours, or perhaps two or three days; in the latter case the injury terminates in desquamation, or a peeling off of the scarf skin.

In the *second* degree, there are in addition to the symptoms of the first, vesicles (or bladders) filled with a transparent fluid of a pale yellowish colour; this fluid (or serum) lies between the true skin and the thin scarf skin (or cuticle). The vesicles are exactly the same as those produced by a blister, and may appear

immediately after the accident, or not until after a day or two. They soon burst, and the scarf skin dies and falls off, leaving exposed the parts which it covered ; matter is then freely discharged from the raw surface until new skin forms. In this case there is no cicatrix or scar left ; but if ulceration take place a scar is sure to follow.

In the *third* degree, the life of the (true) skin is destroyed, and the burned part presents a moist and soft surface of a yellowish or brown colour, with or without vesicles, containing fluid of a dirty brown or of a bloody and turbid appearance ; or it may be dry, black, and charred. The process of sloughing, or separation of the dead parts from the living, commences in the course of the third or fourth day, and is attended with inflammation and fever. The crusts (or eschars) are generally thrown off between the fifteenth and twentieth days, and leave ulcers of a size and depth proportioned to the extent and violence of the Burn.

In the *fourth* degree, the injury extends deeper than the skin, the fat and muscles are more or less destroyed, and the tendons, ligaments, and other parts, even as far as the bone, may subsequently inflame and mortify. In this case the detachment of the dead parts does not take place so soon as in the third variety ; and if the consequent ulceration be very extensive, the discharge of matter may be so profuse and long-continued as to cause great debility, hectic fever, and death.

It ought, however, to be remarked, that with the exception of the first, these degrees do not exist alone ; the second is accompanied by the first, and the third is generally complicated with the first and second.

The varieties of Burns above described depend upon the nature of the accident ; the worst kinds arise from the explosion of gunpowder, the combustion of inflammable gases, or from the dress of females catching fire. Scalds are more or less severe according to the temperature of the fluid applied to the body. Boiling water does not produce so bad an effect as that resulting from fluids which attain a higher temperature, such as oil, lard, soup, the hot liquor in sugar manufactories, &c. These substances also carry with them the disadvantage of rendering the Scald more intense, by adhering to the parts with which they come in contact. On the other hand, spirits, of whatever

description, cannot reach the same temperature as boiling water, and consequently do not injure the skin so severely.

The pain from a Burn is always acute; but when parts are burned deeply, so as to destroy their vitality, the pain is less severe than when the surface of the skin only is injured.

When a great extent of surface is burned, the intensity of the pain may cause death in the course of a few hours, or internal inflammation may take place and carry off the patient within a week after the accident, or suppuration may ensue; and the individual, after lingering a considerable time, at length sinks, being no longer able to bear up against the debility induced by the profuse discharge from the burned surface.

After a Burn of the worst description, the patient complains of being cold, his pulse is weak and almost imperceptible, and shivering usually comes on. If there be also great pain, he soon falls into a state of stupor or insensibility, which, if re-action do not take place, continues until death. This state of insensibility to pain seems wisely ordained to prevent the extreme suffering which would otherwise be the fate of the unfortunate patient.

Women and children, and those who are irritable and nervous, are less able to withstand the violent pain which immediately results from severe Burns, than adults, full-blooded individuals, and old people. But on the other hand, stout people, of a strong robust constitution, suffer more from the subsequent inflammation and fever.

The pain induced by a Burn which is neither so deep nor extensive as to endanger life, may cause a good deal of irritation without bringing on fever. In this case the patient becomes very restless, agitated, and uneasy; his sleep is disturbed, and the pulse may be natural or sharp and frequent. Sometimes there is thirst, dry tongue, hurried breathing, and perhaps vomiting. All these symptoms abate as the pain diminishes.

Inflammatory fever, more or less severe, according to the extent of the injury, accompanies inflammation of the burned parts. Its symptoms are a flushed face, hot skin, dry and red tongue, frequent and strong or hard pulse, thirst, loss of appetite, and sickness at stomach. These symptoms do not continue long; they cease as soon as matter begins to be discharged.

In Burns of the third or fourth degree, where the part has

been so destroyed as to cause much loss of substance, it is often exceedingly difficult, and sometimes impossible, to prevent the cicatrices from being attended with considerable deformity. This arises from the strong tendency which the edges of the sound skin have to approach and unite towards the centre of the opening. This law of the animal economy appears intended to prevent as much as possible the formation of new skin. The power which the skin possesses of contracting in this manner, in order to make up for the loss of substance which has been sustained, is so great, particularly in certain parts, such as the face and neck, that serious deformity is caused in some instances, even after every care has been taken to prevent it. In one case a wry neck is caused, in another the mouth is drawn up towards the eye, or down towards the chin; sometimes the eye-lids are drawn back so that they cannot be closed, and the constant exposure of the eye-balls in consequence may soon cause blindness. A Burn at the bend of the arm extending to the adjacent parts, if proper attention be not paid, may cicatrize so as to fix the arm in the bent position; and a similar occurrence may be the consequence of a Burn at the ham, if a splint be not applied to keep the limb extended while the injured parts are healing. It also requires great care in many cases to prevent burned parts from adhering to each other; for example, the ear may adhere to the skin of the head, or the fingers to each other. Hence the necessity of the utmost attention in treating Burns, in order to avoid these unseemly deformities.

TREATMENT. When we consider the various and opposite methods of treating Burns adopted by medical men, some of which are entirely empirical, and others founded on vague theories, we need not be surprised if people in general are at a loss what to do in cases of accident from fire. It nevertheless becomes every one to know how to act in the event of such accidents occurring, because Burns are inflicted suddenly, medical men are not always at hand, and yet it is necessary to do something immediately, in order to relieve the acute and burning pain which follows these injuries.

The want of a little presence of mind at the time of the accident often renders Burns more severe than they otherwise would be: for example, how frequently does it happen that females,

when their dresses catch fire, instead of taking the most prompt means of extinguishing the flames, generally increase them, by running about screaming for assistance, when they ought to lie down on the floor and roll over and over on the carpet. The erect position of course allows the flames to spread and rise rapidly to the head and neck, parts where the fire is most to be dreaded; whereas the horizontal position, on the contrary, has a considerable effect in preventing their extending. In such cases the hearth-rug, table-cover, a shawl, or any woollen article, are the things to be used by any one who may happen to be near, for the purpose of extinguishing the flames. It also frequently occurs when the legs and feet are scalded, that instead of cutting the stockings and removing them gently, they are drawn off, carrying the scarf-skin along with them; and the true skin being then exposed, the most excruciating pain is produced.

The principle on which Burns are now treated is that of excluding them from the air; and the methods of doing this are so simple, that any one, without the slightest hesitation, may put them in practice in the absence of a medical man. There is no doubt that the method so much in use formerly of dressing burns with *carron oil* and other oily and greasy substances, acted chiefly on this principle. That dirty plan of treatment is now however no longer necessary, since the air can be excluded more effectually and with greater comfort to the patient, by covering the burned or scalded parts with flour, or enveloping them with cotton wool. These are both popular remedies, and the latter was long in use in the United States of America and in Scotland, before it was adopted by medical men. Dr. Anderson, of Glasgow, was the first in this country to call the attention of the profession to the advantage derived from the application of cotton in Burns; and this method has since been found so advantageous, that it is now in very general use in all the varieties of these injuries. But as far as our own observation has gone, we have not found cotton give that immediate relief which is derived from the application of cold water or flour. It is in general adviseable before employing the cotton, either to immerse the parts in cold water, if their situation will admit of this being done, or apply to them pieces of fine linen dipped in cold water, or vinegar and water, and wetted frequently during

several hours, or until the pain and heat are removed. But when the burned surface is extensive there is always a sensation of chillness, which is generally accompanied with cold shiverings. In this case cold applications would do harm, and they ought not to be employed, even when the Burn is slight, if there be a tendency to shivering; nor should they be continued if the patient be not relieved by them, or if they bring on shivering; and they are always improper when the Burn is situated on the breast or belly, or on any other part of the trunk of the body.

When the legs and feet are scalded, they should be plunged as soon as possible into cold water, and kept immersed in it a considerable length of time before the stockings are removed; by this means blisters are often prevented from rising.

The blisters, or vesicles, which frequently make their appearance suddenly, in consequence of a Burn or Scald, should be punctured with a needle, and the fluid allowed to escape. The burned parts are afterwards to be carefully washed with tepid water before applying flour or cotton.

The cotton employed should be finely carded, and then applied over the burned surface in thin layers one over another, until there is a covering sufficiently thick to exclude the air, and protect the parts from undue pressure; bandages are then to be applied over the whole of this envelope, so as to keep up a moderate and equal degree of pressure. In mild cases this dressing will be sufficient, and when removed in the course of ten or fourteen days, the part will be found covered with new skin. But if the discharge of matter be very profuse, it will find its way through the dressing, the soiled part of which must then be removed, allowing that which adheres to the skin to remain, and fresh layers of cotton applied with as little delay as possible, in order to prevent the action of the air on the burned parts. The dressing is to be renewed in this manner as often as it may be found necessary, until the cure is completed.

The application of flour to burned and scalded parts is a remedy very extensively used at present, and is now preferred in some of the London hospitals to any other plan of treatment. As a popular remedy flour possesses some important advantages; it is easily managed, and being always at hand can be immediately made use of. This method is preferable to the use of cotton,

inasmuch as the flour relieves the pain almost as soon as it is applied, thus rendering the application of cold lotions unnecessary. The promptness also with which flour can be applied renders it superior to cotton, which cannot be used advantageously until it has undergone the preliminary process of carding and arranging in thin layers, for if used otherwise, it would press unequally on the burned surface and do harm.

The best way of applying the flour is to sprinkle it freely over the burned parts with a kitchen dredger, until they are completely excluded from the atmospheric air, and then apply soft linen cloths over all. Thus the burned surface is immediately protected by a cool and soft covering, to the great relief of the patient. When the pain returns the flour is to be renewed without disturbing that portion which adheres to the surface. When matter begins to be thrown out, it mixes with the flour and forms over the injured part a thick paste or crust, similar to that formed by the cotton, which is not to be removed until new skin forms. The matter may, however, be easily removed at any time, when circumstances require it by covering the injured part with large warm poultices, which soften and allow the crusts to come away easily. The dressing should be examined from time to time, and more flour applied wherever moisture is observed on its surface, in consequence of the matter finding its way through. In cases of deep Burns, treated either by cotton or flour, it becomes necessary to remove the dressing and examine the parts about once a week, until the sloughs have separated, and the subsequent discharge of matter is diminished. After the dead parts have been detached, it is often found difficult to keep down proud flesh; in such cases a celebrated French surgeon, the late Baron Dupuytren, applied pressure over the dressing by means of sheet lead, which has an excellent effect when properly graduated. The principal advantage derived from cotton or flour is during the acute stage, and therefore when the crust or paste formed in the manner above mentioned is detached from the ulcerated surface, the ulcers may either be treated by astringent lotions, pressure, keeping the proud flesh under by touching it with lunar caustic or blue vitriol, and the other means in general use in such cases (see *Ulcers*), or the flour or cotton may be re-applied and removed every six or eight days until a cure is effected.

The dressings should be changed quickly, so that the parts may be exposed as little as possible to the air; and when the burned surface is extensive, it must not be all exposed at once.

In whatever manner Burns may be treated, the greatest care must be taken to prevent contractions of joints, and improper adhesions between the raw surfaces. The position ought always to be such as to keep the skin extended. Hence, when the front of the arm and fore arm, or the back of the leg and thigh, are burnt, splints are required to keep the limbs extended; but attention must be paid not to allow the joints to become stiff by retaining them too long in one position; they ought to be moved by an attendant from time to time, in order to prevent rigidity, otherwise it might afterwards be both a tedious and difficult matter to restore them to freedom of motion. To prevent raw surfaces from adhering to each other they must be kept separated by placing something between them; for example, to keep the fingers from growing to each other, it is usual either to place strips of adhesive plaster between them, or to keep them extended on a hand-board.

In slight Burns no internal treatment is necessary, repose and low diet are sufficient; but in severe cases, when there is shivering, or a tendency to it, and the patient complains of being cold, and has sickness at stomach, a pale countenance and weak pulse, stimulants are indicated; a little brandy or wine and warm water, with six or eight drops of laudanum, are to be given occasionally; and bottles of hot water, or hot bricks, are to be applied to the feet, until the system recovers from the sudden shock which it has received, and re-action takes place. The warm bath is the best thing for restoring re-action in children.

During the inflammatory stage, the diet must be very sparing, and confined to vegetables, fruit, and farinaceous substances; and barley-water, with thirty or forty grains of nitre, may be given in the course of the day, or the patient may drink freely of soda-water, lemonade, or any other cooling beverage. Attention should also be paid to the state of the bowels, which are to be kept moderately open, without producing purging; for this purpose castor-oil is preferable to saline medicines, which might bring on shivering. Blood-letting is seldom necessary, and can only be resorted to with safety when the patient is of a robust

and plethoric habit of body, and the inflammatory symptoms are running high. The feverish symptoms, after being absent for many days, may return at the time when the eschars or sloughs are being detached, and the same treatment is then again requisite.

When there is much ulceration, with a free discharge of matter, the patient's strength must be supported by light and nourishing diet, such as soup, jelly, and light puddings; and at dinner a little chicken or fish, with a moderate quantity of wine or porter, may be allowed. In this stage it is also advisable to give a grain of quinine in port wine twice or thrice a day, in order to increase the appetite and promote digestion.

CALAMINE, OR CARBONATE OF ZINC.

Prepared Calamine is sometimes sprinkled over ulcers, with the intention of diminishing the discharge of matter, when in excess; or for the purpose of absorbing acrid matter, and thus preventing it from spreading, and irritating the surrounding parts. It is used in the same manner when the skin is chafed, particularly in children, who are very liable to excoriations at the arm-pits, groin, and behind the ears: it generally checks the discharge of matter in these cases, and prevents the necessity of employing astringent lotions. To prevent excoriations in children the powder is also frequently dusted over the parts where they are most likely to take place.

Calamine enters into the composition of the cerate commonly known by the name of *Turner's cerate*, which is prepared by mixing Calamine and yellow wax, of each half a pound, with a pint of olive oil. The oil is first mixed with the melted wax, and when removed from the fire, the Calamine is gradually added, and the mixture constantly stirred until it becomes cold. This cerate is used to promote the healing of ulcers and excoriations, and was formerly much in repute as an application to the ulcerated surface arising from burns.

CALUMBA.

Calumba, or Columbo, is the root of a plant (*Cocculus Palatus*) which grows in Mosambique, and the neighbouring

countries on the east coast of South Africa, where it is called by the natives *Kolumb*. It has been long in high esteem as a mild tonic and stomachic, having no astringent quality, and being but very slightly stimulant. Dr. Percival, by whom this root was considered a valuable tonic, wrote an essay on it which has been in a great measure the means of bringing it into particular notice in this country. When the liver is over-excited, and throws out an immoderate quantity of bile, producing bilious colic, attended with nausea and vomiting, or flux with bilious evacuations, there is no better remedy than Calumba. When there is loss of appetite, flatulency, acidity, nausea, and the train of symptoms arising from a debilitated state of the stomach, Calumba is of great use, and sits lightly on the most delicate stomach, without producing any excitement of the system; on this account it is the tonic commonly used to strengthen the stomachs of consumptive patients. We may give it with advantage to relieve the acidity and sickness of stomach so common at the commencement of pregnancy; and also to children, for the purpose of allaying the vomiting and purging to which they are so subject when teething. Those who have lived long in tropical climates have generally weak stomachs, easily deranged by errors in diet, and are subject to occasional derangement of the biliary organs; in such cases Calumba will often be found more beneficial than calomel, or any thing else, by giving tone to the weakened stomach, and correcting the depraved or redundant secretion of bile. We have found it of the greatest service in the bilious disorders of warm climates.

The dose of Calumba root in powder is from fifteen to sixty grains. The tincture is given in doses of two or three tea-spoonfuls. The dose of the infusion, which is made in the following manner, is two or three tablespoonfuls, repeated three or four times a day:—

No. 81.

Take of calumba root, sliced, five drachms,
Boiling water, a pint. Macerate for two hours, and then strain through a
linen rag.

This infusion spoils if kept long.

CAMPHOR.

The best Camphor comes from the islands of Borneo and Sumatra, where it is extracted from a species of laurel. It is afterwards purified in this country by sublimation. Camphor is a powerful stimulant; but from being very diffusible, its effects are not so permanent as those of other remedies of the same class. This remedy is given in doses of from four to fifteen grains in malignant typhus, in the worst forms of measles, small-pox, scarlet fever, and other eruptive diseases, when accompanied with typhoid symptoms; and also to bring back the eruptions when they have disappeared too suddenly. It has often an excellent effect in painful menstruation when given in doses of three grains three or four times a day. As an antispasmodic, it is given in asthma, hysterics, St. Vitus' dance, epilepsy, hiccup, and other spasmodic diseases. To promote perspiration at the commencement of a cold, an ounce of the Camphor mixture with ten grains of nitre in barley-water, or any other warm drink, every three or four hours, is a common and very serviceable remedy. Camphor is useful as a sudorific in many cases; but on account of its exciting and stimulating properties, it should never be given when any inflammatory action is present. Camphor mixture is now administered in a variety of cases; it is given to prevent, as well as to soothe, the irritation of the urinary organs, which sometimes arises from the application of a blister; and with the same intention when squills, balsam of copaiva, turpentine, and other medicines which act on these organs are administered. Nearly all sudorific and antispasmodic remedies are given in Camphor mixture; and many practitioners give it along with senna, aloes, rhubarb, and other purgatives, to assist their action; and also to correct and moderate the action of colchicum, foxglove (*digitalis*), and other lowering remedies. In fact, Camphor, though not often given alone, may be said to be quite a fashionable remedy; and no one has done more to render it so than Dr. Copland, the learned author of the "Dictionary of Practical Medicine," the most valuable work of modern medical literature.

Camphor mixture is prepared in the following manner—

No. 82.

Take of camphor, half a drachm,
Rectified spirits, ten minims (drops),
Water, a pint. First rub the camphor with the spirit, then with the water,
gradually poured in, and strain through linen.

Of this mixture four tablespoonfuls may be given every three or four hours.

The following Camphor julep, in common use, is made by
rubbing together

No. 83.

A scruple of camphor,
Two drachms of sweet almonds, blanched,
A drachm of sugar,
And six ounces of peppermint-water.
Two tablespoonfuls to be taken as a dose every two or three hours.

Camphor is much in use as a counter-irritant; for this purpose it is usually mixed with oil. An ounce of Camphor dissolved in four ounces of olive oil forms the Camphor liniment of the London Pharmacopœa ; either this or the compound Camphor liniment, which contains ammonia, is rubbed over the joints, or other parts affected with chronic rheumatism. It is used in the same manner for nervous pains, bruises, sprains, indolent swellings, &c. A piece of flannel soaked in a strong solution of Camphor (two ounces of Camphor mixed with four ounces of rectified spirits of wine), applied over the chest, and covered with oiled skin, has sometimes the effect of relieving attacks of spasmodic asthma, angina pectoris, cramp, and other cases, where there is local derangement of the nervous power. In France, Camphor is used in the form of vapour, in chronic rheumatism. The patient is covered with a blanket, which is fastened round his neck; he may, if he chooses, sit on a chair with an open cane bottom. Within the blanket is placed a chafing-dish, with an iron plate over it, on which a tablespoonful of powdered Camphor is put. This soon brings on copious perspiration; and the patient, after remaining about half an hour in the Camphor vapour, goes to bed, and keeps up the perspiration by drinking freely of barley-water, or some other warm drink.

CANCER.

From the frequent occurrence of Cancer, the great suffering which it occasions, and from being incurable, it is looked upon as one of the most terrific diseases to which we are liable. After the closest investigation, and most careful research, by many of the most able and learned medical men, both of ancient and modern times, to ascertain the nature and cure of Cancer without the knife, we are still compelled to admit that little or no progress has been made towards a knowledge of either. It is, therefore, a painful task to depict the insidious approach, the lamentable suffering, and ultimate anguish, which this frightful disorder entails on its victims; while we are well aware that even all the knowledge and art of a Cooper or a Brodie can scarcely point out any way by which it may be palliated. But though the most enlightened and skilful men regret their utter ignorance of any means of eradicating this formidable malady, empirics are, nevertheless, to be found in every large town, who boast of being able to cure this disease by secret remedies, which they pretend to have discovered; and thus live by deceiving the ignorant and unfortunate individuals who, with that clinging to life so natural to every one, resort to them in the vain hope of being cured. Empiric remedies for this disorder, frequently containing arsenic, and bearing the government stamp, appear without number, backed by the most plausible misrepresentations, and wilful and deliberate falsehoods, which the public journals lend their columns to disseminate. As soon as one of these licensed nostrums has had its day, and is forgotten, another is ready to supply its place; and thus they go on in endless succession, and are likely to do so, as long as people are credulous enough to place confidence in infallible remedies for incurable diseases.

Cancer is a disease common to both sexes, but women are more subject to it than men. It is not often seen in people under twenty-five years of age, and very rarely before the age of puberty. Women are most frequently attacked after the menstrual discharge has entirely ceased; but it often occurs in men at an earlier period of life. Authors assure us that Cancer is more common in people who live in towns than among country people;

and it is met with most frequently in the upper and lower classes of society. It may attack any organ of the body; but in women the breast and womb, and in men the lower lip, stomach, liver, and testicles, are the parts most frequently affected. Those of the lymphatic temperament, with fair skin, soft flesh, and delicate constitution, are said to be more predisposed to this disease than others.

The exciting causes of Cancer are general and local: the most frequent general causes are low diet, abuse of spirituous liquors, excess in venery, long-continued trouble of mind, the depressing passions generally, and the suppression of any habitual discharge, such as the menstrual secretion, or the discharge from piles. The most common local causes are blows, or other local injuries, undue pressure, and repeated and long-continued irritation; but in many cases no cause whatever can be traced. The general opinion, however, is, that none of these causes could have any effect in bringing on Cancer without the system being previously disposed to the complaint; but of the nature of this predisposition we know nothing, neither can we tell whether a person possesses it or not; all that we know is, that it frequently shows itself to be hereditary.

CANCER OF THE FEMALE BREAST is by far the most common of all cancerous affections; and the period at which it is usually observed is between forty and fifty years of age.

The first, or occult stage (scirrhus), generally commences with a small hard tumour, round and circumscribed, situated rather deeply in the breast. This is moveable, without pain, the skin covering it retains its natural colour, and the fingers may almost be passed beneath the tumour. After remaining in this state a considerable length of time, it enlarges, becomes hard, heavy, and unequal upon its surface, and gradually approaches the skin, to which it at length adheres. If no pain existed when the tumour was first observed, it is now felt acutely, though more at one time than at another: when first experienced it is of a shooting, stinging, or lancinating character, and felt only occasionally, particularly during the night. But, as the disease advances, for it never retrogrades, the pain becomes infinitely more acute, and recurs more frequently, until at last it is almost constant, and the patient can seldom sleep without the aid of medicine. The

tumour, after adhering to the skin, acquires a flattened and knotted appearance, and after some time forms adhesions with the flesh under it. The glands in the arm-pit and above the collar-bone now begin to enlarge, and become indurated; and the skin covering the Cancer assumes a livid, leaden, or dull red colour; and the veins running underneath are much enlarged. The nipple is fixed, and drawn in, leaving an opening where it formerly protruded, from which, in some cases, a transparent brownish coloured fluid is discharged; and the skin round this opening appears uneven and puckered. One of the protuberances, or small tumours lying above the diseased mass, ultimately opens at the most projecting part, and an acrid bloody fluid is thrown out; the opening gradually enlarges, and a foul sore is formed.

The second, or open and ulcerated stage of Cancer, has now commenced; the discharge continues, the sore goes on increasing in size, the edges are hard and generally turned outwards, though sometimes inwards; the surface is of a deep red, purplish, or ash colour, and is irregular, some parts being raised, and others excavated. The excavations, or hollows, are filled with a greyish or dark-coloured matter, of a particularly fetid smell. The chasm continues to increase both in breadth and depth; the pain becomes constant and excruciating, with a burning or gnawing sensation at the part; the discharge is very profuse, thin, acrid, and of a remarkably fetid and peculiar smell; and the blood-vessels are corroded, and frequently discharge considerable quantities of blood, the loss of which tends greatly to debilitate the patient. The constitutional symptoms, which may have declared themselves more or less at an earlier period of the disease, become now fully developed. The face has a dirty, sallow appearance, peculiar to those affected with Cancer; and the skin acquires a sort of dull straw-coloured tint. There is, in most cases, a slow fever, with profuse perspiration and occasional purging; the digestive organs suffer, and the appetite is lost; the feet and ankles are swollen, and the bones, in some patients, become so fragile, that they are broken from any slight exertion, such as turning or getting up in bed. The debility and emaciation increase, the breathing is affected, and the pulse may be intermittent: at last death comes to relieve the patient from her misery. This frightful picture is not overdrawn; and it is truly remarkable

with what fortitude and resignation females undergo the lingering and terrible suffering which invariably accompanies Cancer.

Although Cancer of the Breast generally commences in the manner above described, it is sometimes developed differently. In some cases the whole breast becomes indurated and enlarged; and the skin adheres to the parts beneath, so that it cannot be moved over them as in the healthy state. Many small knots form in the skin, which becomes excoriated, and then dries up, leaving crusts or scabs over the knots, attended with considerable itching. These scabs are either removed or thrown off; others form and are detached in the same manner; and this goes on, until foul sores, with hard, jagged edges are formed, which after some time communicate with each other, and spread over the whole breast. The disease may advance, carrying its ravages into the breast, or the patient may die from the extensive Cancer of the skin and parts immediately subjacent. In other cases the tumour is fixed, so that it cannot be moved without moving the breast at the same time, and attains a degree of hardness, weight, and density, which no other tumour ever acquires; but the breast, instead of being enlarged, may be more or less diminished in bulk. Sometimes the tumour is tender to the touch and painful from the very commencement; or it may reach a considerable size before any pain is felt.

It is often a very nice and difficult matter to distinguish between other tumours of the breast and those resulting from the first stage of Cancer. The symptoms, however, the most characteristic of a cancerous tumour are, its constant progress, great hardness, irregular shape, and unequal, lobulated, or knobbed surface; the darting or lancinating pains (though similar pains are sometimes felt in other tumours); and, at a more advanced period, the dusky leaden colour and puckered appearance of the skin, and its attachment to the tumour. When a tumour of the breast is felt fluctuating, and the skin is changed in colour and feels hotter than natural, it is certainly not of a cancerous nature. We cannot tell why Cancer of the Breast is influenced by the menstrual discharge; but we know that, during three or four days prior to the return of that period, the pain in the tumour becomes considerably more severe, and that it is much relieved

for several days after that discharge has ceased. We also know that an indurated tumour of the breast may exist for years without giving any pain or uneasiness, until the entire cessation of the menses, at which period it becomes increased in size, very painful, acquires all the characters of Cancer, and goes on rapidly to a fatal termination ; but when the tumour does not appear until some years after that period, and more particularly if not till after sixty years of age, it then, in general, progresses slowly, is very little painful, and may even pass into the open or ulcerated stage, and continue until the termination of life, without materially shortening existence.

TREATMENT OF CANCER OF THE BREAST. Though all tumours of the breast are not of a cancerous nature, and though many of them are harmless, and may be cured by very simple means, yet they ought all to be looked upon with the greatest suspicion, particularly if they have originated without any known cause, or have existed for any length of time ; and no female, on detecting any unnatural hardness in her breast, should rest satisfied until the necessary means have been adopted to get rid of it. There can be no greater folly than to trifle with a tumour of the breast, whether it may have arisen from a blow, or resulted from a milk abscess, or any other cause ; since Sir Everard Home, Andral of Paris, and many other distinguished medical men, who have made it their particular study to observe cancerous affections in all their bearings, are of opinion that tumours of that organ, though simple, and in no degree malignant at their commencement, may, if neglected, degenerate into Cancer. In fact, a tumour of the breast may be of long standing, without having declared itself sufficiently to allow one to know whether it be of a cancerous nature or not ; nor can we be sure that this is not the case, until the means used to disperse it have been successful. Many, on detecting a tumour in the breast, let it alone, because they feel no pain or uneasiness ; some conceal it for years, from a feeling of false delicacy, and others from a dread of the knife, until, at length, they become alarmed by the increase of bulk, and the stinging pain which it occasions ; and then, in all probability, the disease is beyond the reach of treatment. Thus, thousands of females lose their lives, or at least the only chance of cure, by not having the tumour cut out at the

period which would admit of any chance of success from that operation.

A blow, or some other external violence done to the breast, may cause a tumour more or less extensive and painful, according to the degree of injury inflicted. In this case, the treatment consists in the application of six or eight leeches to the part, and the constant use of cold lotions of vinegar and water, or spirits and water: the bleeding by leeches to be repeated as often as it may be found necessary, until the inflammation be subdued. But when the part remains hard, after the pain and inflammation have been removed, mercurial ointment with camphor, or iodine ointment, will be found the best means of promoting absorption, along with the employing of leeches at intervals of two or three days; the quantity of blood abstracted being regulated according to the strength of the patient. The iodine ointment is preferable when there is reason to suspect that the system is tainted with scrofula. It is prepared in the following manner—

No. 84.

Iodine, half a drachm,
Iodide of potash, the same quantity,
Rectified spirit of wine, a drachm,
Lard, an ounce. Mix.

The camphorated mercurial ointment is made by mixing half a drachm of camphor with an ounce of mild mercurial ointment. About the size of a nut of either of these ointments to be rubbed gently over the part, night and morning; continuing the friction a quarter of an hour or twenty minutes each time. The patient's bowels are to be kept open with rhubarb and magnesia, or any other gentle laxative; and five grains of Plummer's pill should be given every night, or every second night, as an alterative, with decoction of sarsaparilla. This treatment may be adopted in every doubtful case, whether the induration have existed for weeks or years; and if after continuing it for some length of time, no benefit is obtained, the patient should make up her mind to have the tumour cut out. It is quite possible that the tumour at this early stage, even after it has resisted the most energetic treatment, might not be of a malignant nature; still, prudence will direct us to extirpate the disease rather than to run the

risk of its terminating in Cancer. Besides, at an early period, before the tumour has adhered to the skin, the operation can be performed with great ease, in a short time, and with very little pain; whereas, if it be allowed to advance until the skin become puckered and discoloured, and the glands in the arm-pit affected, there would be little or no chance of success from an operation; the system is then too deeply contaminated with the cancerous poison, and the disease would either re-appear at the breast, or somewhere else.

We have had already occasion to remark, that the less any disease is understood, the more numerous are the remedies proposed for its cure; and this observation certainly holds good with regard to the disease of which we are now treating. But we do not propose to notice all the numerous and powerful remedies, both of the mineral and vegetable kingdoms, which have been used in various forms with the intention of curing Cancer. Mercury, arsenic, iron, iodine, hemlock, and many other substances possessing great power in producing changes in the human frame, have all had respectively their advocates, who have boasted of the many cures derived from them. Baron Stoerck, of Vienna, declares that he cured many cases of Cancer with hemlock, and that he almost found it specific: but if he could perform such wonderful cures from that plant eighty years ago, how does it happen that the most eminent men of the present day cannot cure a single case with it? If Recamier, of Paris, and others, have cured many cases by compressing the Cancer with pads and bandages, how is it that Sir Charles Bell, who gave that plan of treatment a fair trial at the Middlesex hospital, at the request of the governors of that institution, declares, that instead of deriving any benefit from this method, he found it decidedly injurious? Goulard informs us that he frequently succeeded in curing the occult stage of Cancer with the extract of lead: Justamond would have us believe that he was equally successful with arsenic; and even now we hear of extraordinary cures effected by manchineel and other deadly vegetable poisons from South America. But the conclusion which every unprejudiced person must come to is, that no remedy has been hitherto discovered capable of curing Cancer, either in its occult or ulcerated stage; and whenever any one boasts of being in possession of any

specific means for the cure of this malady, it may fairly be inferred, that he is either deceiving himself, or that his object is to deceive others. We must therefore repeat, that instead of losing time, and trifling with a cancerous tumour, by attempting to cure it, the patient ought at once to have it cut out, and thereby secure the only chance of escaping, or submit to be ultimately carried off, since it is obvious that no reasonable hope of cure can be held out from any other means yet devised. When, however, from dread of the operation, or from having allowed the only period to pass by in which it might be performed with advantage, the patient has deprived herself of every prospect of getting rid of Cancer, all that can then be done is to retard its progress as much as possible, and mitigate suffering. For this purpose we have several remedies, the most valuable of which is certainly *hemlock*. This medicine was used by the ancients in the treatment of tumours of the breast; but the high reputation which it now holds is due to Baron Stoerck, who, though he was mistaken in supposing hemlock to be almost an infallible cure for Cancer, yet pointed out clearly the great power it possesses in preventing the disease from advancing so rapidly as it otherwise would do, as well as in alleviating the pain. The dose of the extract of hemlock should not be more at first than three grains, formed into a pill, and given night and morning, an hour, or an hour and a half, before eating: the quantity to be gradually increased to the extent of twenty-four grains in the course of the day, or until it produce slight giddiness. The diet during this, or any other treatment, should be moderate in quantity, and easy of digestion. Stimulating food, with fermented liquors, would do as much mischief as the method adopted by some of almost starving the patient. Fomenting the breast with a decoction of the leaves of hemlock, or of henbane, and the application of poultices of the fresh leaves, or of the dried leaves softened with boiling water, have often an excellent effect in soothing the pain, when used moderately warm. Sir Astley Cooper recommends a drachm of the *extract of belladonna* rubbed down with an ounce of soapcerate, to be applied to the part. When hemlock begins to lose its effect, the extract of aconite and the extract of henbane, remedies possessed of similar virtue, when given in the same doses, and continued in the same manner, may be substituted for it

with great advantage. Sometimes, however, all these remedies fail, and it then becomes necessary to have recourse to opium, or some of its preparations. A grain of solid opium may be given as a dose to begin with; fifteen drops of Battley's opiate, or a quarter of a grain to half a grain of acetate of morphia, will answer the same purpose. The dose of these opiates must of course be gradually increased; and as opium tends to constipate the bowels, the latter ought to be carefully attended to.

It is of the greatest importance, in females under a certain age, to attend to the state of the menses, since, from the intimate connexion which exists between the functions of the womb and breast, any irregularity in the monthly discharge is sure to be attended with an aggravation of the symptoms of Cancer in the breast.

In the open or ulcerated stage of Cancer nothing more can be done, besides alleviating the pain by the narcotic remedies already mentioned, than to diminish the smell and check the bleeding, which sometimes comes on in consequence of the corrosion of the blood-vessels. Carrot poultices have been long in very general use for the purpose of diminishing the smell and soothing the pain: a similar effect may be derived from finely powdered charcoal mixed with poultices of linseed or marshmallow, or from washing the sore occasionally with a weak solution of the chlorate of lime or of soda. Mr. Carmichael, of Dublin, recommends the carbonate (or rust) of iron made into a thin paste with water, to be applied over the sore. Some patients find considerable ease from dressing the ulcer with Battley's opiate, or with an ointment composed of a drachm of powdered opium mixed with an ounce of lard or spermaceti ointment. The sore should be dressed more or less frequently, according to the extent of the discharge; but we should take care to expose it as little as possible to the air. When bleeding takes place, a piece of sponge should be applied, with some dry lint between it and the sore, to be secured with a moderate degree of pressure, by means of a bandage.

The treatment then consists in mitigating the pain, and tranquillising the nervous system, by means of hemlock and other narcotics; in dressing the sore with emollient and soothing applications; in supporting the patient's strength by light nutritious

diet, easy of digestion, and by the administration of tonics, the most suitable of which are *quinine* and the *carbonate of iron*; half a grain of the former, or three grains of the latter, to be given three times a day, in conjunction with the extract of hemlock.

The means resorted to for palliating this awful disease are, after all, but feeble and often of no avail; and yet, during the whole of its tedious course, we see the patient, though aware that she has no hope of a termination to her suffering but in death, bearing up against the most excruciating pain, with a calmness and resignation which the consolation of religion, and the hope of a happy existence hereafter, can only give.

CANCER OF THE STOMACH. If women are most liable to Cancer of the breast, men are more subject to Cancer of the Stomach, which is equally to be dreaded, since the latter form is also invariably fatal in its termination. It is usually brought on from blows over the stomach and other external injuries; long-continued excess in eating and drinking; distress of mind, and hereditary disposition. We have an example of the influence of the two last-mentioned causes in the case of Napoleon Buonaparte, who lost his life from Cancer in the Stomach, though he had not a symptom of this, or of any other disease, when he arrived at St. Helena: the disposition, which he inherited from his father, who also fell a victim to this complaint, combined with grief and disappointment, no doubt tended strongly to bring it on. But, as has been already mentioned, no exciting causes, though they may tend to develop Cancer, can excite the disorder, either in the stomach or in any other part or organ, without a constitutional disposition, either congenital or acquired. It is seldom met with before the age of thirty, and is in general a disease of advanced life.

This form of Cancer commences with uneasiness at stomach without pain, heartburn, eructations, and other symptoms of indigestion; and, in fact, it cannot at first, and even for several months, in many cases, be distinguished from that complaint. After a longer or shorter period, however, the symptoms of Cancer become so decided, that there can be no longer any doubt with regard to the nature of the case. Shooting pains are felt at times extending to the back and loins; the mind becomes much dejected and the body emaciated; sickness and vomiting

are experienced from the slightest error in diet. The parts of the stomach most frequently affected with Cancer are the *pyloric*, or lower opening leading to the gut; and the *cardiac*, or upper opening, where the gullet terminates. When the lower orifice, which is more frequently the seat of this disease than the body of the stomach, or its upper orifice, is affected, the pain is much increased about three or four hours after taking food; sickness then comes on, followed by vomiting, which relieves the patient for a time; but, if the disease be at the upper orifice, the pain is severely felt as soon as the food has passed down the gullet; from the irritation produced, the food is frequently returned almost immediately; when, however, it has entered the stomach, the pain ceases. Some patients, rather than be subjected to this kind of torture, almost starve themselves. When these apertures are in a state of health, and the Cancer is situated in the body of the stomach, the food enters without inconvenience, but gives great pain shortly afterwards, and vomiting frequently follows. At this stage of the disease, the pain is increased on pressure over the stomach; and in many cases a hard swelling may be felt. To these symptoms are added, obstinate costiveness, thirst, feverish restlessness during the night; and, in some cases, the stomach retains the food which has been just swallowed, and rejects that which had been taken the day before; in others, it accumulates during several days, until at last the stomach becomes so distended, that free vomiting of the half-digested aliment, mixed with watery or ropy mucus, takes place.

At first there is considerable difficulty in detecting this disease, inasmuch as the pain may not be of a lancinating or stinging kind, and the vomiting not regular; and though there may be acid eructations, fetid breath, flatulence, distension and a feeling of weight at the stomach, and occasional vomiting; yet all these symptoms might arise from other causes. But when the more marked signs already enumerated are present, particularly when there is vomiting of a fetid dark-coloured matter, resembling coffee-grounds or chocolate; and when a hard tumour can be felt between the false ribs of the right side and the navel, which changes its position to a certain extent, according as the stomach is full or empty, there can then be no doubt with regard to the nature of the disease.

Cancer of the Stomach is very irregular in its progress ; sometimes the symptoms are much relieved for a time, and the patient thinks he is getting better : in some cases it advances rapidly, and terminates fatally within a few months ; in others, it continues during many years.

TREATMENT. Since Cancer of the Stomach cannot be distinguished at first from disorders of that organ, of a slow inflammatory nature, it follows that the treatment, as long as there is any doubt existing, should be directed towards a radical cure, and not to merely palliating the symptoms. A rigorous and properly regulated diet is at this early period the chief means to be relied on. The patient must confine himself to food of a mild nature ; and every thing which would excite the stomach, or increase the irritation, should be strictly avoided. Milk in most cases answers better than anything else ; some stomachs, however, cannot support it : when milk turns acid on the stomach, it is of course unsuitable. In some cases a little animal food, properly masticated, is most easily digested ; in others, liquid diet, such as mutton broth, veal broth, and beef tea, is more suitable. But, in general, arrow-root, tapioca, sago, blanc-mange of rice, the preparation of oats, well known in Scotland under the name of *sowens*, and other mild farinaceous substances, taken in small quantities at a time, will be found to produce the least irritation. Animal jellies in small quantities may be tried ; and there can be no better article of diet than asses' milk, when it agrees with the stomach. The object is to give the stomach as little work to perform as possible, and to avoid irritation by improper food ; nor should it ever be overcharged with any kind of food, since we know that when in a disordered state it cannot carry on the process of digestion as in health ; and half-digested aliment must of course act as a source of irritation. The drinks to which the patient should give the preference are, lemonade, orgeat, barley-water, a decoction of liquorice, and linseed tea.

A pill composed of two grains of *oxide of bismuth*, and the same quantity of the *extract of henbane*, or of *hemlock*, should be taken three times a day ; and six or seven leeches are to be applied over the stomach at intervals of three or four days, or a week. The daily use of the tepid bath is also advisable. The bowels must be carefully attended to ; and the best laxatives are

Henry's calcined magnesia, rhubarb and manna; but it is better to avoid acting on the bowels through the medium of the stomach; the French plan of relieving them by clysters is preferable. At first, an injection of warm water, or a decoction of linseed or marshmallow, will answer the purpose; but afterwards it becomes necessary to throw up an infusion of senna-leaves with castor oil. If there be no appearance of amendment after this treatment has been continued during some weeks, it will be advisable to insert a seton or issue over the stomach, or to rub in the tartar emetic ointment. (See page 26.) But if the symptoms remain unabated, or go on increasing in spite of all these remedies united, and the patient's strength is giving way, we should abandon them altogether, and adopt the palliative treatment recommended for Cancer of the Breast. At no period of the disease should emetics, antispasmodics, and strong purgatives be given. Towards its termination, when every kind of food is rejected by the stomach, life may be prolonged for some time by the use of injections of strong soup, beef-tea, &c.; but who would wish to prolong such a wretched existence?

CANCER OF THE WOMB. When Cancer attacks the hollow organs or cavities, it begins almost invariably at their openings, as the lips, the upper and lower openings of the stomach, the fundament, and the mouth of the womb. The body of the latter organ is very seldom primarily affected, its mouth and neck first become gradually indurated and enlarged, and the symptoms at this stage are so obscure that the individual may be a considerable length of time without knowing that any diseased action is going on. But when the second or ulcerated stage has begun, the symptoms are sufficiently apparent. No cause can be assigned for this disease; it attacks the married and unmarried, and may commence at any age after puberty; but the period at which it usually begins is a little before or after the turn of life.

In general the first symptom that alarms the patient is a more or less profuse flooding, recurring at irregular intervals, which is preceded or followed by the discharge called the whites. This discharge after some time acquires a fetid smell and becomes thin, and brown or greenish in its appearance. A disagreeable sensation of weight soon begins to be experienced at the lower part of the belly, accompanied with occasional pains of

a bearing down or aching kind. The patient at this time may retain her usual strength and appearance, but by degrees her limbs waste and lose their natural plumpness, though the face may appear very little changed, and she complains of an aching sensation and weakness about her loins. As the disease goes on the emaciation and debility increase, the face appears shrunk and deadly pale, or of a pale straw colour; dull, dragging, burning, and lancinating pains are felt at the lower parts of the belly and back, extending to the groins and thighs, the urine requires to be frequently discharged, and there is considerable pain attending the evacuation of the bowels. At a still later period of the disease all the symptoms are aggravated, the pain without the aid of strong anodyne remedies would be intolerable, the peculiar smell from the matter discharged is almost insupportable, the stomach becomes very irritable, frequent vomiting harasses the patient; and the debility is often greatly increased by frequent discharges of blood from the genitals. The patient being no longer able to withstand the pain, hectic fever, and want of sleep, sinks from exhaustion, or she may perish from a profuse discharge of blood. Sometimes the Cancer eats its way both into the bladder and bowels; the urine and excrements are then mixed with the cancerous matter, and are discharged involuntarily. This deplorable state, however, cannot exist long, inflammation soon follows, and puts an end to the patient's suffering. The length of time required by this disease to run its course is very variable; in general, the younger the patient is, the quicker it carries on its ravages; but it may remain in the occult or scirrhouss state during several years.

We have already mentioned that Cancer of the Womb commonly commences with flooding, but this symptom is not peculiar to it; the disease may arise from polypus or other tumours of the womb, or of the passage which leads to the womb (called the vagina), or from chronic inflammation of the same part, attended with softening. But when any unnatural discharge of blood takes place between the periods of the menstrual discharge, or after its final cessation, no time should be lost in seeking the best medical advice. The appearance of whites in females who have passed the turn of life, is a symptom to be looked upon with considerable suspicion, and ought never to be neglected,

however small the quantity of the discharge may be, inasmuch as it is often a prelude to Cancer of the Womb, or a symptom of some other disease of that organ, or of the vagina.

TREATMENT. If Cancer be found a dangerous and intractable disease, when seated in the breast and stomach, it is not less so when it attacks the womb. All the internal remedies and various methods of treatment which have been tried with the intention of curing this form of Cancer, have deservedly fallen into disrepute ; and medical men are now satisfied that they can do nothing more than palliate symptoms and endeavour to retard its progress. The disease is so painful and disgusting, that females have willingly submitted to dangerous operations, and the most severe methods of treatment, in the hope of getting rid of it. Cutting out the neck of the womb was first practised by Osiander, a German surgeon, and high expectations of success were at one time formed from this plan of treatment. An eminent French surgeon, M. Lisfranc, of the hospital of La Pitié, in Paris, stated a few years ago that he had cured eighty-four women out of ninety-nine, on whom he had performed this operation ; and were this statement correct, it would be of the greatest importance ; but neither the surgeons of his own country nor of this give credit to his assertions. M. Pauly, house surgeon of the same hospital, who assisted Lisfranc in many of these operations, and had paid great attention to their results, says, that he has never seen amputation of the neck of the womb successful when there was real Cancer. Burning the diseased portion of the womb with caustic is another painful method of treatment, which has been tried and found equally unsuccessful. If Cancer were the result of inflammation, and entirely local, these methods of treatment would in all probability be successful ; but since this disease depends on a peculiar vice in the system which cannot be eradicated, it is sure to recommence in the womb or develop itself in some other part of the body. There is every reason to believe that when amputation of the neck of the womb has proved successful it has been in cases in which chronic inflammation, or induration not of a malignant nature, has been mistaken for Cancer ; cases which might have been cured without this dangerous and painful operation.

Whenever pain or flooding comes on, the patient should remain

in the recumbent position ; and she ought not to take exercise unless the pain has been absent for some time. A tepid *decoction of poppies* or five grains of the extract of hemlock, dissolved in a decoction of marshmallows or linseed tea, may be thrown up the vagina several times in the course of the day, with the intention of soothing the pain ; but great care must be taken not to touch the diseased part with the end of the syringe, and while the injection is being thrown up, which should be done very gently, the patient ought to lie with her hips considerably raised. *Hemlock, henbane*, and the *preparations of opium*, may either be given in the manner recommended in the treatment of Cancer of the Breast, or five grains of the extract of hemlock, or from six to twelve drops of Battley's solution of opium, dissolved in one or two tablespoonfuls of warm water or linseed tea, may be thrown up the anus, which in this case will in general be found the best mode of using them. As the disease advances the quantity of these anodynes must be increased ; but it is adviseable not to repeat them more frequently, or use more at a time than is really necessary to alleviate the pain. Instead of using injections which cannot in every case be retained, a pill (suppository) composed of seven or eight grains of extract of hemlock, or from two to four grains of powdered opium with the same quantity of soap, may be passed up the anus. During the ulcerated stage of the disease, when the discharge is very copious and fetid, injections of soap and tepid water, followed by a weak solution of the *chloride of soda*, are to be thrown up the vagina in order to keep the parts clean and diminish the smell. The horizontal position is absolutely necessary, and the strictest attention must be paid to the diet recommended in Cancer of the Stomach, in order to prevent irritation of stomach and the consequent vomiting, which when once commenced cannot easily be checked. The tepid bath may be used, and great care should be taken to keep the bowels gently open by means of the following electuary, or some other mild laxative—

No. 85.

Take of the confection of senna, an ounce and a half,

Milk of sulphur, half an ounce,

Honey of roses, a sufficient quantity to form an electuary. One, two, or three teaspoonfuls of this to be taken as a dose at bed-time, when necessary.

CANELLA BARK.

Canella Bark is tonic and aromatic; it is seldom given alone, but is found useful in preventing griping from aloes, senna, and other strong remedies, and also tends considerably to cover their disagreeable taste. In people of sedentary habits, who are troubled with indigestion, attended with constipation of the bowels, Canella is a very efficacious medicine in conjunction with aloes. It enters into the composition of *hiera picra*, an old and well-known popular remedy. The *ramier*, or wood-pigeon, so well known in Dominica and other islands of the West Indies, derives the agreeable aromatic and bitter flavour for which it is so much admired, from feeding on the berries of the Canella tree, which is common in those islands, where it is known under the name of the wild cinnamon tree. The dose of Canella Bark is from ten grains to half a drachm.

CARBUNCLE.

Carbuncle may appear without constitutional disturbance, but in general it is preceded by loss of appetite, foul tongue, headache, lassitude, general uneasiness, and shivering. At first it can scarcely be distinguished from a common boil, commencing in the form of a pimple, which gradually enlarges and becomes hard, broad, and elevated. The tumour is circumscribed and flat, the skin of a dark red or violet colour; the hardness or firmness which accompanies it is compared to that of brawn; it is hot to the touch and very painful, with a sensation of burning heat, and a disagreeable feeling of stiffness. A Carbuncle may not go beyond the size of a hen's egg, but sometimes it becomes as large as a saucer, or may even attain a diameter of eight or nine inches. The accompanying symptoms are, hot skin, thirst, severe head-ache, restlessness, high-coloured urine, and other feverish symptoms. When left to itself it softens at the most prominent part, and little vesicles or bladders form, which burst and discharge a small quantity of a bloody, badly formed and fetid matter. The softening goes on, the openings increase in number, enlarge, and run into each other. The matter now discharged has an appearance which Sir Astley

Cooper says is peculiar to Carbuncle, and which he compares to flour and water mixed together. The skin between the openings is gradually destroyed and sloughs off, allowing the cellular substance or fat which the tumour contains to be easily seen. This substance is in a state of mortification, though it does not appear black, in consequence of being saturated with matter which gives it a greyish or ash colour. The smell exhaled is strong and very disagreeable. Carbuncle commonly goes on to mortification in the course of ten days from its commencement, and the dead parts are thrown off towards the end of the fourth week, leaving a deep cavity which requires a considerable length of time to fill up and heal. An ugly cicatrix is invariably left.

Children and robust people are most subject to boils, several of which may exist at the same time, but Carbuncle appears alone, and elderly people, whose constitutions have been impaired by improper living, are most subject to it. Carbuncles are seldom seen on the limbs; the parts which they generally attack are the back, particularly between the shoulder blades, the loins, the nape of the neck, and hips, though they are occasionally met with on the belly and over the chest. Carbuncle generally terminates favourably, but is a disease by no means unaccompanied with danger: the risk attending it depends upon the age, constitution, and previous habits of the individual, as well as on its size and the part which it attacks. Carbuncles of the head and neck generally prove fatal.

TREATMENT. As soon as a Carbuncle begins to make its appearance, the object is to keep the inflammation under as much as possible without debilitating the patient. The bad habit of body and advanced age of the individuals who are attacked by this disease, render general blood-letting improper, but local bleeding by the frequent application of leeches may be very serviceable, and ought never to be neglected. From ten to twenty leeches should be applied round and over the part, and the bleeding afterwards promoted by warm fomentations, or by the application of a warm poultice. In some cases the constant use of cold applications to the part, as Goulard water employed as a lotion, or with crumb of bread in the form of a poultice, are found to answer best in keeping down the inflammation; in other

they produce shivering, and increase the patient's uneasiness. In general warm fomentations of the infusion of linseed, decoction of marshmallow, and warm poultices of bread or of linseed, are most serviceable. The internal treatment consists in keeping the patient on low diet, and in administering the following powders—

No. 86.

Tartar emetic, one grain,
Cream of tartar, half an ounce. Mix, and divide into six powders. One to be given every hour.

If the cream of tartar be found to act too freely on the bowels, the quantity should be diminished. This treatment, when steadily persevered in, although it seldom has the effect of arresting the inflammation, yet not unfrequently allows it to terminate in suppuration: when this takes place an eschar forms on the summit of the tumour, which, when cut into, gives vent to the matter, and the sore afterwards fills up and heals. But when the inflammation ends in the death of the contents of the Carbuncle, which is the usual termination, and which may be known by the most elevated part of the tumour becoming soft, with little vesicles or bladders on its surface, the best plan is to make two cuts, crossing each other, completely through to the bottom, carrying their extremities a little beyond its circumference. The loose part of the dead cellular substance is then to be squeezed out, and poultices applied. Sir Astley Cooper recommends a cataplasm composed of linseed meal and port wine, which is no doubt as good an application as could be employed, but it has no advantage over the common yeast poultice, which is less expensive. Prior to the whole of the sloughs being detached, the matter is acrid and very fetid; it is therefore necessary to change the poultices at least three or four times a day. When the dead cellular substance is entirely thrown off and the cavity begins to fill up, the dressing should consist of the red precipitate ointment spread on lint, or on a piece of soft linen rag, with a soft poultice applied over it, or the sore may be washed occasionally with a solution of from six to ten grains of lunar caustic to an ounce of water.

CASCARILLA BARK.

This country is supplied with Cascarilla Bark principally from the Bahama islands. It is an excellent tonic and stomachic, without being astringent, and was much used before the discovery of quinine as a remedy in ague, particularly in cases in which the Peruvian bark could not be given without producing sickness at stomach and purging. In simple indigestion arising from weakness of stomach, Cascarilla is one of the best and most grateful tonics that can be administered; it is also very useful in checking purging when not caused by inflammation. An agreeable sensation of warmth in the stomach is produced by this medicine, which never causes vomiting, and is easily digested. Quinine has now, however, in a great measure superseded the use of Cascarilla, Canella, and other tonic barks. Cascarilla, when burned, gives out an agreeable aromatic odour, and is on this account used as an ingredient in pastiles, and some people smoke a little of it along with tobacco. The dose of Cascarilla in powder is from ten to thirty grains; and the dose of the infusion, which is the best method of using it, is from two to four tablespoonfuls. "Take of Cascarilla Bark bruised, an ounce and a half; boiling water, a pint; macerate for two hours in a vessel lightly covered, and strain."

CASSIA. (*Cassia fistula.*)

The Cassia-tree is cultivated in Jamaica, and its pods, which are about a foot and a half to two feet in length, are imported into this country from the West and East Indies. The pulp of the pods mixed with manna, pulp of tamarinds, and syrup of roses, form the confection of Cassia of the pharmacopœia, which acts gently as a laxative, without producing irritation of the bowels or griping, and is therefore well suited for old people and children. It is given in doses of from two drachms to an ounce. Cassia is more used on the continent than in this country, particularly in fevers and inflammatory affections.

CASTOR OIL.

Castor Oil is obtained from the seeds of the *Palma Christi*, a plant which grows in great abundance in nearly all warm climates.

Cold-drawn Castor Oil is brought to this country from the East Indies, where it is prepared by pressing the seeds without the aid of heat. It is of a pale straw colour, possesses very little smell, and its taste, though not strong, is mawkish and disagreeable. The West India Castor Oil is prepared by boiling the seeds in hot water, and skimming off the oil as it rises to the surface ; it is of a darker colour than the East India oil, has a disagreeable odour, and is apt to produce griping. The best East India Castor Oil acts quickly as a mild purgative, seldom producing griping or constitutional disturbance ; hence it is considered the best purgative in all inflammatory affections of the bowels, in colic, piles, the dry belly-ache of the West Indies, and habitual costiveness. There is no better laxative than this oil for children and for females during pregnancy. When a person is in the habit of taking purgative medicine it is in general found necessary to increase the dose ; the reverse of this however is the case with Castor Oil, the doses of which may be gradually diminished, hence the advantage of it in the treatment of habitual costiveness. In the East Indies it is used externally in the treatment of gout and rheumatism, by rubbing it into the parts affected, and then covering them well with flannel. Various plans are adopted to cover its nauseous taste ; some take it with warm milk, others prefer it floating in a little spirit. One of the best methods is to beat it up with the yolk of an egg, and then add gradually a little cinnamon or peppermint-water, or a little plain water, with two teaspoonfuls of the tincture of cardamoms, to prevent sickness at stomach. It may be given to very young children, in the dose of half a teaspoonful to two or more teaspoonfuls, according to the age. For a grown-up person the dose is one, two, or three tablespoonfuls.

CATALEPSY, OR TRANCE.

Catalepsy is a disease of the nervous system, of an intermittent nature, and recurring in fits at irregular intervals. It is characterised by the sudden and complete suspension of consciousness and voluntary motion ; the body and limbs retaining, throughout the fit, the position in which they were at the moment

of the attack ; or any other position which may be given to them during its course. Females are most subject to this rare and singular disease. Many theories have been proposed to account for its extraordinary symptoms, but none of them are satisfactory, and its nature remains still unknown.

We have only seen two cases of Catalepsy ; the first was that of a woman about forty years of age, in the hospital of Santa Maria Nuova, at Florence, who had been subject to frequent attacks during several years ; the other case was under our own charge, and we shall use the liberty of transcribing from a medical journal a short history, which we communicated to it about two years ago. "Charlotte Limon, twenty-two years of age, servant to Mr. Fowler, farmer, at Ranby (a village in Lincolnshire), walked about a fortnight ago a distance of seven miles to consult me. She appeared to be a very intelligent girl, and though not robust, did not seem in bad health, nor did she complain of any thing, except occasionally of slight head-ache a short time previous to the cataleptic attacks. On entering the room her face appeared flushed ; on my remarking this to her, she said it arose from having walked so far during the hottest part of the day. After sitting some time, detailing the history of her case, I was about to feel her pulse, and when in the act of presenting her arm for that purpose, she was seized with an attack, and remained with her body leaning forward, and her arm extended. She was talking at the moment the paroxysm commenced, and left the sentence she had begun unfinished ; her eyes were closed, but the expression of her face was not in the least changed ; the respiration was so gentle as scarcely to be observed ; and the action of the heart was in no way affected ; pulse seventy-two. There was very little resistance offered by the trunk or extremities in changing their position, and they steadily retained any attitude in which they were placed. Both arms remained in a raised position much longer than they could have been maintained in a state of health. I ascertained the latter by holding my watch in my hand for forty-five minutes, during which time she sustained the right arm extended in a horizontal position, without exhibiting the slightest appearance of fatigue. At the expiration of the forty-five minutes I changed the position of her arm myself. Her face retained the same

florid appearance throughout the fit that it had on her arrival. After she had been in this state about an hour, I observed tears running down her cheeks ; the pulse was then for a short time considerably quicker ; I conjectured she was dreaming, nor was I mistaken, for on questioning her afterwards, she informed me she had had a very disagreeable dream, but that during the fits her dreams were more vivid and generally more agreeable than in natural sleep, and that she retained a more distinct recollection of them. While she was in the cataleptic state I have just described, I endeavoured to arouse her by employing such means as I had seen employed by Dr. Elliotson and other advocates of Mesmerism. I blew into her eyes, rubbed her eyelids strongly, pressed her shoulders, &c., but without the least effect. After the paroxysm had lasted several hours, she changed her position and appeared restless ; on then speaking to her she answered questions, though seemingly with reluctance and rather incoherently. I urged her to get up and walk, but she requested to be allowed to remain a little longer where she was ; about half an hour afterwards she got up, and without the slightest headache or uneasiness walked back to Ranby.

" I have been able to ascertain the following facts with regard to her case :—She was seized with the first cataleptic attack about two years since, when in a hot bath, being then under treatment for an affection of the throat, and the fits were during several months after very frequent, occurring every other day, and sometimes daily ; they are not so frequent now, though this depends on circumstances, as any cause acting more than usual on the mind, or any bodily exercise continued longer than usual, is almost certain to induce a paroxysm. The attacks are generally preceded by certain premonitory symptoms, such as slight headache, confusion of intellect to a certain extent, and ringing in the ears ; as soon as these sensations commence she goes to lie down, being well aware that a fit is approaching ; but occasionally there is no warning whatever, and more than once she has been seized with a fit whilst standing ; she then remains as motionless as a statue, until placed in a chair or carried to bed. The fits are of various duration, from an hour to twenty-four hours, but seldom any longer. She has not the most distant idea of the length of time she remains in the cataleptic state ; for example, a fit

occurred one morning about seven o'clock, which continued until the following morning between eight and nine o'clock; she thought it had lasted only about an hour, and (to the amusement of her fellow-servants) seemed much pleased that it had been of so short duration. She had during a considerable length of time a determination of blood to the head, for which the medical man who then attended her had recourse to cupping the nape of the neck; being naturally of a timid disposition, the sight of the cupping instrument invariably threw her into a fit. When in the cataleptic state she is unconscious of every thing going on around her, and insensible to pain. As a proof of this, I may mention that one day when being cupped, through some inadvertency, her neck was burned with the hot spirit of wine; she did not seem to feel it in the least, though she complained of pain immediately on recovering from the fit some hours after. Various methods of treatment have been adopted, but without producing any lasting good effect. Obstruction of the catamenia was at one time supposed to keep up the disease, but in that respect she is now perfectly regular, and has been so for several months, though the disease continues nearly as inveterate as ever. I have not been able to trace any visceral disease with which the Catalepsy might be connected."

Hypochondriacal and hysterical women, and those with irritable nervous systems, appear to be most predisposed to this disease. Habitual melancholy, religious enthusiasm, love, great anxiety, extreme sorrow, and other passions which act strongly on the nervous system, are supposed to be predisposing causes. The immediate exciting causes are anger, terror, sudden fright, or any strong mental emotion. In some instances it would appear that Catalepsy depended, at least to a certain extent, upon irritation of the brain or spinal marrow, a deranged state of the stomach and bowels, obstruction of the menstrual discharge, and other irritating causes; but individuals have been affected with it in whom no other disease could be detected, though in the majority of cases it seems to have been intimately connected with hysteria. It is not a dangerous disease, but there is reason to believe that in some instances individuals have been buried while in a cataleptic state.

TREATMENT. When Catalepsy appears to be kept up by any

exciting cause, the treatment of course ought to consist in removing that cause if possible; if from irritation of the brain, or from determination of blood to the head, leeches should be applied, at intervals of five or six days, behind the ears, to the nape of the neck, and along the course of the jugular veins, and the bowels kept freely open. If from obstruction of the menses, then the warm hip bath should be frequently employed and the *carbonate (rust) of iron*, with *aloes*, administered. If the stomach and bowels or other organs are affected, the necessary means ought to be resorted to for the purpose of restoring them to a healthy state. Persons with pale countenance, soft flesh, and weak constitutions; aged people, and those with spongy gums and scorbutic spots on the body, who have laboured long under this disease, should have recourse to quinine or other tonics, and generous diet, with wine. Antispasmodics, such as *assafætida*, *aether*, *camphor*, &c., may give some temporary relief; but upon the whole they have been found worse than useless. We do not believe that advantage can be derived from any kind of treatment during the attack. In all cases the shower bath may be tried, regular exercise should be taken in the open air, and nothing is of more importance in the treatment of Catalepsy than a proper regulation of the mind.

CATARRH OF THE BLADDER.

This term is given to a profuse discharge of mucus from the bladder, which is voided along with the urine, at the bottom of which it is deposited. The mucus is thick, tenacious, and adheres to the sides of the vessel which contains it; it is not unfrequently fetid, and is sometimes equal in quantity to that of the urine. The urine may be either of an acid or alkaline nature, but the mucus is always highly alkaline.

This disease may proceed from various causes. It is frequently the result of acute inflammation of the bladder, and of disease of the kidneys or of the tubes (ureters) which convey the urine from them to the bladder; it may arise from piles, stone, or gravel in the bladder, disease of the prostate gland, or from chronic inflammation of the bladder, which may have been preceded, or

not, by acute inflammation. It may be brought on from exposure to damp or cold, and is sometimes connected with a disordered state of the stomach, gout, and rheumatic affections : men advanced in life are most frequently the subjects of this complaint.

Catarrh of the Bladder may exist without being attended with actual pain, but there is, in most cases, a constant sensation of uneasiness at the lower part of the belly ; and the patient after unusual exercise, excess in eating or drinking, or any other exciting cause, feels a heavy dull pain in the part. Sooner or later, in some cases from the commencement of the disease, a frequent desire to make water is experienced, and it cannot be voided without considerable difficulty and pain ; but as soon as the bladder is empty the pain abates. The mucus, which was at first scanty and resembling the white of eggs, changes, as the disease advances, to a yellowish and then to a greenish colour, becomes very copious, and acquires a disagreeable smell. If the disease cannot be checked, the patient's strength gives way, he becomes gradually emaciated, ulceration of the bladder takes place, and matter is then discharged along with the mucus ; hectic fever comes on, and death soon follows.

The duration of this disease is very irregular ; it may terminate in the course of a few months, or may exist during several years. The affection is considerably aggravated by cold damp weather and sudden changes of temperature ; but those who have been long troubled with it are much relieved during summer ; and some patients have got entirely well by removing to a warm climate.

TREATMENT. The treatment laid down for Irritable Bladder (see page 55) is also in a great measure applicable to this disease. The urine should be tested with litmus paper, and acid or alkaline remedies exhibited, according to the state in which it is found. It is often checked at the commencement by the daily use of the following mixture, if great attention be paid at the same time to proper regimen and diet—

No. 87.

Balsam of copaiva, thirty drops,
Tincture of henbane, three drachms,
Camphor mixture, four ounces. Mix.

This mixture to be taken in three doses in the course of the

day. Many practitioners give *mercury* at the beginning of this disease, in small doses, as an alterative, either with or without the above mixture. But it should never be given when the constitution of the patient is broken down, if the urine be alkaline, or if the disease have existed long. It may be administered in the following form—

No. 88.

Blue pill, twelve grains,

Acetate of morphia, two grains. Mix, and divide into twenty-four pills. Three of these pills to be taken in the course of the day. They may be continued during three weeks, a month, or even longer.

If this treatment fail, the *decoction of pareira brava*, recommended in the treatment of Irritable Bladder, should be resorted to, and continued regularly during two or three weeks. This is a most efficacious remedy, and has been given with the very best effects by Brodie, Guthrie, and other experienced surgeons. If, however, it should be found not to relieve the patient, recourse ought to be had to the infusion of buchu leaves, a remedy possessed of similar virtues. (See page 98.) If the constitution of the patient be not already much enfeebled, it will be advisable to apply five or six leeches to the lower part of the belly, or to the perinæum, and to repeat the application of the same number every three or four days, or at longer or shorter intervals, according to the strength of the individual. Roux and other eminent French surgeons, strongly recommend a *seton* to be applied at the lower part of the belly, over the bladder; but in this country the tartar emetic ointment (see page 26), as a counter-irritant, is generally preferred, though it does not appear to be attended with so much benefit. Emollient and soothing fluids injected into the bladder have in some cases been found useful; but in general the irritation produced by the introduction of instruments into the bladder renders this method of treatment not eligible. Anodyne remedies are to be given with the intention of soothing the pain and allaying the irritability of the bladder; they may be either administered internally, or in the form of a clyster: the latter method is considered preferable, inasmuch as it allows the anodyne to be applied more directly to the seat of the disease, and also renders it less liable to produce head-ache or derange-

ment of the digestive organs. Six or eight drops of *Battley's opiate*, with an ounce or two of thin starch, should be thrown up the bowel every five or six hours; or from four to six grains of the *extract of hemlock*, with one or two grains of *opium*, may be introduced beyond the sphincter of the anus, every night and morning, or oftener if necessary. (See *Suppository*.) If the exhibition of anodynes by the mouth be preferred, the best one to commence with is the *extract of henbane*, in conjunction with *camphor*, two grains of each made into a pill, to be given as a dose, and repeated twice or thrice a day. The extract of hemlock or of aconite may be given in the same doses, and their use may be alternated with the preparations of opium, the best of which are the acetate of morphia and Battley's opiate; from a quarter of a grain to half a grain of the former should be administered in divided doses during the day, and of the latter the dose is six or eight drops, to be taken in a little water and repeated every six hours. But, as we have had already occasion to mention, the doses of all anodyne medicines must be gradually increased, whether they be given internally or in the form of clyster, and the principal thing to be attended to in conducting their administration, is not to repeat them too frequently, nor give them in larger doses than the state of the patient really requires. Care must be taken to keep the bowels moderately open by emollient clysters, and small doses of castor oil, or rhubarb and magnesia. The hip bath at bed-time will be found of considerable service. There is no disease in which it is more necessary to attend to the regimen and diet of the patient than this. He should reside in a dry situation, wear flannel next the skin, and take gentle exercise in the open air; his diet should consist of milk, light puddings, rice, and occasionally a little tender animal food. The drink should be of a demulcent nature, as barley water, linseed tea, and toast and water: it seldom happens that wine or other fermented liquors can be taken with impunity. Change of air and sea bathing have in some cases been found very beneficial.

If Catarrh of the Bladder depend upon disease of the kidneys, gout, stone, or gravel in the bladder, stricture in the urethra, &c., the treatment of course should be directed to the removal of these disorders.

CATECHU.

Catechu is produced from a species of acacia, which grows in various parts of India. It is an excellent and very powerful astringent, and is frequently used for the purpose of stopping purging, when there are no inflammatory symptoms present, in combination with chalk mixture and laudanum. It is given to check gleet, whites, discharges of blood from the bowels and womb, and all immoderate discharges when not attended with inflammation. A little of it put into the mouth and sucked slowly, is the best remedy for relaxation of the uvula or pap of the throat, when it hangs down and causes irritation, cough, and difficulty of swallowing. It is used in the same manner in sponginess of the gums, when they bleed from slight causes. When made up in lozenges with sugar and gum arabic, it is used by public speakers and singers to clear the voice, and also to prevent hoarseness. Pale Catechu answers best for chewing, and is the least disagreeable to the taste. The dose of the powder is from ten grains to a drachm, of the tincture from one drachm to three drachms; but the infusion, which is made as follows, is the best form of exhibiting it: "Take of extract of Catechu, powdered, six drachms; cinnamon, bruised, a drachm; boiling water, a pint; macerate for an hour in a vessel lightly covered, and strain." The dose of this infusion is from two to six tablespoonfuls.

CAYENNE PEPPER, OR CAPSICUM.

Cayenne Pepper is more used as a condiment to food than medicinally: it promotes digestion and prevents flatulence. The natives of warm climates, who live principally on vegetable food, mix with it a large quantity of the various kinds of Capsicum to promote digestion and give tone to the stomach; and this diet appears much better suited for those climates than the rich and stimulating dishes of animal food, with wine and spirituous liquors, on which Europeans generally live. The former kind of aliment appears intended by nature for the inhabitants of hot climates, since, without being either too exciting or irritating, it allows them to resist the action of *malaria*, or the effluvia from

decaying vegetable and animal matter; and to avoid the fevers, dysentery, and other inflammatory diseases which cause the death of so many Europeans, in consequence of their indulging in the latter mode of living, which disposes to those diseases, and also renders them more frequently fatal than they otherwise would be.

Capsicum is at present extensively cultivated in Europe, and, as it is now understood to possess all the virtues of the oriental spices, without producing any of their bad effects, has in a great measure superseded their use. In fact there is at present no other stimulating vegetable substance so much in use in the seasoning of food as this; it is extensively used in the preparation of pickles; and vinegar, which has acquired a sufficient degree of pungency from the pods of the bird-pepper (Chili vinegar) is considered the most wholesome and one of the most agreeable things that can be used with all kinds of fish.

From a drachm to two drachms of the tincture of Capsicum, with half a pint of water, form an excellent gargle for malignant sore throat; and Chili vinegar diluted with water is also used in the same manner in relaxed sore throat, with elongation of the uvula. Poultices of the bruised pods of Capsicum are much employed in the West Indies, instead of mustard poultices; they are equally powerful and not so apt to blister the parts. Cayenne Pepper, with brandy, in strong doses, frequently repeated, is the best remedy that can be used for the purpose of counteracting the effects of the powerful narcotic poison from the land crabs of the West Indies. Cayenne Pepper is sometimes used along with the preparations of iron, when there is obstruction of the menstrual discharge; and it is also used as a tonic in scrofulous and other chronic cases. It is more used as a medicine in tropical than in temperate climates. The dose of the powder is from six or ten grains, made up in pills; and that of the tincture is from ten drops to a drachm, in barley water. The tincture is prepared thus: "Take of Capsicum, bruised, five drachms; proof spirit, a pint; macerate for fourteen days, and strain."

CHALK.

Chalk is principally employed in medicine for the purpose of checking purging, from acidity in the stomach and bowels: it is

mild in its action, and well suited for children. The dose of prepared Chalk in powder is from fifteen to thirty grains, but it is usually given in the form of the Chalk mixture. "Take of prepared Chalk, half an ounce ; sugar, three drachms ; mucilage of gum arabic, an ounce and a half ; cinnamon water, eighteen fluid ounces ; mix. The dose is from two to four tablespoonfuls every three or four hours." The compound powder of Chalk is used for the same purpose, and is prepared as follows: "Take of prepared chalk, a quarter of a pound ; cinnamon, two ounces ; tormentil, and gum arabic, of each an ounce and a half ; long pepper, a quarter of an ounce ; rub them separately to a very fine powder, then mix them. Dose from five to thirty grains." The utility of these preparations of Chalk is increased by giving along with them a little laudanum, catechu, or kino.

CHAMOMILE FLOWERS.

Chamomile is an excellent stomachic, and is one of the best popular remedies in common use. Those who suffer from heart-burn, flatulency, loss of appetite, and other symptoms of indigestion, may find much benefit from cold Chamomile tea, with a little powdered ginger, taken early in the morning. The cold infusion, which is the best and most agreeable way of using it as a tonic, is made with half an ounce of the flowers to a pint of cold water. If the warm infusion be preferred, care should be taken in preparing it, not to allow the flowers to remain with the water longer than ten minutes. When there is nausea in consequence of the stomach being overcharged with food, a strong infusion of Chamomile taken warm, acts as an emetic ; and it is often given to assist the action of other emetics. The flowers steeped in hot water, and wrapped in flannel, retain the heat a long time, and are therefore very useful as a fomentation. The extract of Chamomile is serviceable as a tonic, in doses of from eight to sixteen grains : it is usually combined with a little myrrh and a preparation of iron.

CHICKEN-POX.

This disease has been so seldom met with in grown-up people, that it may be considered as peculiar to children. It is a disorder

of very little importance, though at the commencement it is often a source of considerable uneasiness to parents who think that their children have caught small-pox; and indeed it is sometimes no easy matter to distinguish Chicken-pox from the mild or modified small-pox, so frequently observed since the introduction of vaccination.

The eruption of Chicken-pox generally makes its appearance without symptoms of fever, though it is not unfrequently preceded by head-ache, drowsiness, foul tongue, sickness at stomach, and slight increase in the heat of the skin and quickness of the pulse; but these symptoms seldom continue longer than twenty-four hours. The eruption is generally first observed either on the breast, or all over the body at the same time. The pocks are distinct, irregular in shape and size, though for the most part they are oblong or of an irregularly circular form, and vary from the size of the head of a pin to that of a split pea. They are filled on the first day of their appearance with a clear inodorous fluid, are accompanied with a sensation of itching, and there is a red margin round the base of each. On the second or third day the pocks or vesicles which are formed merely by the elevation of the scarf-skin, begin to burst of their own accord, or are broken; and on the third or fourth day the fluid in those that remain entire, acquires a straw-coloured appearance, and soon dries up, leaving crusts which crumble away gradually or fall off in scales about the fifth or sixth day, without leaving pits or any other appearance, except a little redness, which soon disappears. It ought to be remarked, however, that all the eruption does not come out at the same time; there are successive crops of vesicles, and while some are just appearing, others are in a state of maturity, and at the same time crusts may be here and there observed. During the progress of the eruption the general health is little or not at all affected, the sleep is not disturbed, nor the appetite impaired.

Chicken-pox cannot be propagated by inoculation. It is quite independent of small-pox and vaccination, and may come on before or after them, nor does it in the slightest degree interfere with the regular progress of cow-pox.

Chicken-pox is a disease of so mild a character, that it cannot easily be mistaken for small-pox, which is a very serious and frequently a fatal disease. It may be well, however, to point out

the difference between it and the mild or modified small-pox, with which it is more likely to be confounded. There is little or no fever before the appearance of Chicken-pox ; the skin round the pocks is red, they are filled with a clear fluid on the first day of their appearance, and they have neither a hardened base nor central depression ; and when punctured they fall to the level of the surrounding skin. In modified small-pox there is always fever, accompanied with severe head-ache, and sometimes delirium, during at least forty-eight hours before the eruption, which appears first on the face in the form of hard pimples surmounted with small, circular vesicles, containing matter, and depressed in the centre. The scabs or crusts are always considerably raised above the level of the skin, and when they fall off leave small hard swellings, which disappear slowly. There is still another distinction between small-pox and Chicken-pox ; the former, whether modified or not, is highly contagious, whereas the latter is not considered to be so.

TREATMENT. This disease is of so harmless a character, that it may be safely left to nature. A little castor-oil or rhubarb and magnesia may be given if the bowels be constipated, and the patient should not be allowed to eat animal food for a few days.

CHILBLAINS.

Chilblain is a name given to a species of inflammation which arises from exposure to a severe degree of cold. The parts most frequently attacked by it are the fingers and toes, particularly the little finger and little toe, and the heels ; the extremity of the nose, the tips of the ears, and the cheeks, are also sometimes affected with it. A Chilblain, in the first or mildest degree, is neither accompanied with pain nor heat, unless the part affected be kept near the fire, or be influenced by the atmosphere of a warm room, and then it becomes only a little warmer than natural, with a peculiar sensation of itching and tingling, which is troublesome and disagreeable, though it cannot be called painful ; but there is always more or less swelling of the part, and the skin has a livid or purple colour. In the second degree of this affection, there is considerable heat, pain, and swelling,

and these symptoms are occasionally so severe as to deprive the person of the use of the parts: the hands of young ladies, for example, are sometimes so swollen and painful that they cannot write, or play on the piano-forte; and in fact are for a time rendered incapable of doing anything requiring the free use of the joints. In the third degree, little vesicles or blisters rise on the surface of the Chilblain, which break and discharge a thin brownish-coloured fluid. A raw surface is thus exposed, and sores are produced which give out an acrid matter that irritates the surrounding parts; and the ulceration, if not checked, penetrates deeply and destroys the soft parts, even as far as the bones.

Children, females, delicate individuals with fair complexion and tender and irritable skin, and those of a scrofulous habit of body, are most liable to Chilblains. They are frequently brought on by the bad habit of sitting near the fire immediately after coming out of a frosty atmosphere, with the feet and hands benumbed from cold; and they are just as likely to be produced by quitting a warm apartment suddenly and going out into the cold air, particularly if the feet and hands happen at the time to be slightly moist from perspiration.

TREATMENT. Stimulating applications are found to be the most efficacious in curing Chilblains. A liniment composed of half an ounce of the *tincture of Spanish flies*, with three ounces of *soap liniment*, is strongly recommended by Mr. Wardrop; and Linnaeus advises a lotion to be used several times a day, composed of water, with a sufficient quantity of spirit of salt (muriatic acid) to render it strong enough to be felt, without being too stimulating. One of the best liniments in general use is composed of an ounce of *camphorated spirit of wine*, mixed with half an ounce of *Goulard's extract*. Mercurial ointment spread on lint, or on a piece of soft linen rag, is an excellent application when the skin is not broken. *Lunar caustic* is much employed on the continent in the following manner: the Chilblain having been first moistened with a wet towel or handkerchief, is to be gently rubbed two or three times with a piece of caustic, which gives the skin, in the course of a few minutes, first a white, and shortly afterwards a dark brown colour. Care, however, must be taken not to make the part too moist before applying the caustic, which

should not be used more freely than is really necessary. This plan of treatment is not attended with pain, and when properly managed, generally effects a cure in the course of a few days. A *tincture of iodine*, prepared by dissolving a drachm of iodine in three ounces of rectified spirit of wine, is perhaps the best remedy for this troublesome complaint which has yet been tried. It should be used only once a day, and applied gently over the part with a soft brush.

The proper treatment for *broken or ulcerated Chilblains*, is in the first instance to apply warm poultices of bread and milk, or linseed meal, which are to be discontinued after two or three days, and the tincture of iodine applied. The ulcers and all the discoloured skin surrounding them are to be moistened with it once a day, and then dressed with basilicon ointment, spread on lint, or on a piece of soft linen rag. Lunar caustic, in the proportion of from five to ten grains to the ounce of water; and a drachm of red precipitate mixed with an ounce of basilicon, are useful dressings for broken Chilblains. When the sores assume a healthy appearance and begin to heal, these stimulating applications must either be made very much weaker, or discontinued altogether, and basilicon or any simple dressing substituted for them.

Persons whose feet and hands become chilled and benumbed from exposure to a moderate degree of cold, should avoid sudden vicissitudes of heat and cold as much as possible: they should take regular exercise in the open air, having the extremities of the body well protected by warm clothing; and if those parts should become chilled from exposure to cold, care ought to be taken to restore the heat gradually by friction, by means of warm water or otherwise, and not to expose them to the fire or to sudden heat. Those who are subject to Chilblains should take care, after washing the hands and feet, to dry them properly, and not leave them in the slightest degree moist; and during the winter months they should avoid washing the hands in cold water. Bathing the feet and hands every night in warm water, with some common salt dissolved in it, is one of the best means of preventing Chilblains.

CHOLERA MORBUS.

Cholera Morbus is generally divided into two species; common cholera, and the Asiatic or blue cholera.

COMMON CHOLERA. Common Cholera occurs in every country, and at all seasons of the year; though it is most common in warm climates, and in the summer months in this country, particularly when the heat is greater than usual. It generally commences with griping pains in the belly, and sickness at stomach; and these symptoms are soon followed by frequent vomiting and purging: the food in the stomach is first discharged; then a fluid, varying in colour, but always containing bile, is thrown up in great abundance; the evacuations from the bowels also contain bile, and are voided with considerable straining, heat, and pain at the lower bowel (*tenesmus*). There is at the same time a violent pain at the stomach; and the belly, and in some cases the calves of the legs, are contracted by strong spasms, which recur at short intervals, accompanied with great pain. These distressing symptoms are attended with much anxiety, restlessness, and a sensation of burning heat at the stomach, with urgent thirst and severe head-ache; and the pulse, which is at first full and rather quicker than natural, becomes feeble and rapid as the disease proceeds; and the patient's strength diminishes. In ordinary cases these symptoms abate of their own accord, or are checked by the assistance of remedies in the course of a few hours, or they may continue during two or three days, and then cease gradually. But in the more severe cases, such as we have frequently had occasion to observe between the tropics, and which are occasionally met with in this country, the symptoms acquire a more alarming character; the vomiting and purging become almost constant, and the matter vomited is sometimes watery, frothy, or slimy, and only occasionally mixed with bile, but that fluid in a highly acrid state forms always a part of the discharge from the bowels; and this appears to be one of the most marked distinctions between the common and the Asiatic Cholera, in which the stools do not contain bile. The body and limbs are covered with cold sweat; the muscles of the belly are frequently contracted, and drawn into knots by violent spasms, which also attack the legs, the thighs, and even the hands and

arms. If the progress of the disease cannot be arrested, the face soon becomes deadly pale, shrunk, and expressive of the greatest pain; the eyes appear sunk in their orbits; the extremities of the body become cold, and the pulse weak and intermitting. Sometimes the patient recovers even after the disease has advanced to this extent; but in general the strength diminishes rapidly, frequent faintings, laborious breathing, and hiccup supervene; and death is then inevitable. If from the unaided efforts of nature, or from the judicious use of medicine, the stage of collapse or sinking, which has just been described, be prevented, the symptoms, after a longer or shorter period, varying from six to forty-eight hours, usually abate suddenly, and not in the gradually decreasing manner in which recovery takes place from inflammatory diseases: the skin assumes its natural warmth; the pulse becomes more full and less frequent; the vomiting, purging, and cramps cease; and the patient, though very weak, remains quiet, and free from pain. No disease reduces the strength so quickly as Cholera, nor is there any other of so violent a character from which recovery is so rapid. Convalescence, however, when proceeding in the most favourable manner, is often abruptly terminated by the imprudence of the patient, who, finding himself completely rid of the disease, and his appetite again in full vigour, indulges in eating animal food, and drinking wine or some other stimulating liquor; and in consequence all the symptoms are reproduced, and soon become less manageable than before; or inflammation of the stomach and bowels comes on, which supervening on Cholera, generally runs on to a fatal termination in spite of the best conducted treatment.

Cholera has always been observed to be most prevalent when the weather is hot during the day, and cold and moist at night; and the frequency of its occurrence as well as its severity appear to depend on the degree of heat and humidity of the atmosphere. That sudden vicissitudes of temperature, by checking perspiration, tend strongly to bring on Cholera, there can be no doubt; and it appears equally certain that the principal cause in warm climates is *malaria*, or the effluvia arising from marshy ground or stagnant water, which in all probability possess considerable influence as an exciting cause of the disease in all countries.

Sydenham mentions that in his time, a hundred and forty years ago, Cholera prevailed annually as an epidemic, and generally in the month of August. "This disease," he says, "comes as certainly at the close of the summer, or at the approach of autumn, as swallows at the beginning of spring, or cuckoos about the dog days." England was then more densely wooded, and contained more marshy and half-drained land, and the same attention was not paid to cleanliness and ventilation as at present: the sources of *malaria* were therefore more abundant, and ague and Cholera were consequently diseases of frequent occurrence, though now comparatively rare. In the marshy parts of Italy and of the West Indies, where ague of the worst description prevails, Cholera is also very common; and these diseases are frequently connected with each other; in fact, intermitting Cholera, recurring at regular or irregular intervals, is by no means uncommon; and as it arises from the same cause as ague, so it is also cured by the same remedy, namely, quinine or bark. Cholera, however, cannot be solely attributed to atmospheric changes, inasmuch as it is well understood to be occasionally produced by other causes, as drinking cold water when the body is heated, the use of ices immediately after meals, eating crude, unripe, or cold vegetable substances, as melons, cucumbers, mushrooms, unripe apples and pears, &c.; animal food too long kept, smoked meat and fish, stale fish, particularly salmon, rank bacon, badly cured hams, and other articles of food difficult of digestion, have been known to bring on Cholera. It may also be caused by any strong mental emotion, as anger, violent grief, and sudden fright; and sometimes it occurs without any known cause.

Cholera is easily distinguished from other diseases by the sudden manner in which it commences, the quickness of its progress, and abrupt termination. The symptoms arising from swallowing acrid poisons, such as arsenic, vitriol, corrosive sublimate, &c., have in most cases a strong resemblance to those of Cholera; but the burning sensation extending from the throat down the gullet to the stomach, before the commencement of vomiting; the frequent occurrence of violent vomiting, some hours before the bowels are acted on; the dark, bloody appearance of the matter vomited; and in general the absence of cramps; are signs which sufficiently indicate poisoning from irritating substances.

TREATMENT. A very common practice at the commencement of Cholera is to administer barley water, chicken broth, linseed tea, &c., with the intention of diluting the acrid bile, and protecting the lining membrane of the stomach and bowels from its irritating action; but this method of treatment, instead of producing the desired effect, tends to increase the vomiting and purging, and by losing time allows the disease to gain ground. It is then far better to resort at once to the remedies which have been found most advantageous in arresting its progress. As soon as the disease is recognised, a grain of *solid opium* in the form of a pill should be given, and the dose repeated every hour, or oftener, according to the severity of the case. From the time that the first dose has been taken, all kinds of drinks must be abstained from as much as possible; but in most cases the thirst is so urgent as to render it difficult to restrain the patient from drinking, even when he knows that vomiting will be the immediate consequence. He may, however, be occasionally permitted to let a small portion of ice dissolve in his mouth, which also may be frequently rinsed with cold water, or any cooling beverage. While opium in the solid form is used to allay the vomiting and irritation of the stomach, a clyster, composed of a teaspoonful of *tincture of opium* (laudanum), with half a teacupful, or less, of thin starch or barley water, should be exhibited, and repeated at longer or shorter intervals, as the case may require, in order to check the purging. Three hours after the vomiting has ceased, a little cold water or iced lemonade may be taken from time to time, until the thirst abate; but several hours more must elapse before any kind of food can with propriety be allowed. This method of treatment, if commenced sufficiently early, and steadily persevered in, generally stops the vomiting and purging, in all ordinary cases, in the course of a few hours. Purgatives, when taken at any time during the course of the disease, invariably do harm; but a mild dose of castor oil, Henry's magnesia, or some other gentle laxative, may be given some time after all the symptoms are relieved, to carry off any vitiated bile or other acrid secretions which may be retained in the bowels.

Although Cholera, as it is usually met with in Great Britain, is generally subdued by the judicious use of opium, yet that

remedy does not produce the same good effect in the more intense forms of the disease so common in warm climates, unless when combined with large doses of calomel. We have found the following treatment the most efficacious in the Cholera of those climates :—

When the disease commences with nausea, and occasional griping and purging, two tablespoonfuls of chalk-mixture (see page 142) with from five to ten drops of laudanum are to be given after each evacuation from the bowels : and this simple treatment conjoined with rigid abstinence in many cases checks it entirely in the course of a few hours ; but when the premonitory stage of the disease has been neglected, or the remedies made use of to cut it short have not produced the desired effect, and violent vomiting and purging have set in, it then becomes necessary to exhibit large and frequently repeated doses of *calomel* and *opium* : at least ten grains of the former and two grains of the latter in the form of pills, should be given as a dose, to be repeated without loss of time in the event of the stomach rejecting them. In the course of two or three hours the same quantity is to be given, and it may be necessary according to the urgency of the case to repeat the medicine in this manner until three, four, or more doses have been taken. However formidable this mode of treatment may appear, it is nevertheless the safest and most efficacious which has hitherto been tried ; and though we might suppose that such large doses of calomel would affect the mouth, yet they seldom do so ; for in the severe forms of some of the diseases of tropical climates, which present symptoms of extreme violence and consequently run their course rapidly, the system offers a powerful resistance to the action of mercury, and moreover in Cholera it seldom happens that all the medicine is retained by the stomach.

The pain and burning sensation of the stomach and spasms of the belly may be much relieved by cloths wrung out of hot water and then moistened with spirits of turpentine, applied over the stomach and belly, and kept on as long as the patient can bear them. When frequently repeated, no external application is of more service than this.

When the disease is about to terminate favourably, which it generally does when the above treatment is properly conducted,

the irritation of the stomach abates, the vomiting becomes less frequent, and an increased discharge of bile from the bowels is observed: the latter symptom is always favourable, and soon followed by decrease of vomiting, cramps, and other bad symptoms.

In Europeans of robust constitution free blood-letting produces a very decided effect in overcoming tropical Cholera, but in those who have been long inured to the climate, and among the natives, it is pernicious in the extreme, and tends more than any thing else to hasten the stage of sinking or collapse.

We have never seen any benefit derived from rubbing in laudanum over the stomach. In a state of health, or during any mild disease, this would soon produce a very marked effect; but when the body is under the influence of Cholera, the power of absorption is so much impaired that any attempt of this nature to quiet the disease is not only fruitless, but very annoying to the patient. We have known, however, the introduction of morphine through the medium of the skin, in the following manner, to allay the vomiting and spasms when no kind of medicine would remain on the stomach:—A liniment composed of equal parts of *strong* liquid *ammonia* and lard mixed together is to be well rubbed in over the stomach until the scarf skin is removed and a raw surface exposed, or it may be applied spread on a piece of linen, which will cause the part to be blistered in the course of a quarter of an hour or twenty minutes. Over the raw surface, which need not be larger than twice the size of a crown piece, from two to three grains of the *acetate of morphia* mixed with six or eight grains of sugar in fine powder are to be sprinkled, and the part immediately covered with suitable bandages. In the course of half an hour, in many cases, the vomiting, purging, and spasms cease completely; and then in order to prevent the morphine acting too strongly as a narcotic, the covering should be removed, and the part washed carefully with warm water and afterwards dressed with a little spermaceti ointment.

If the disease proceed until the extremities of the body become cold, the pulse feeble and intermitting, and other symptoms of depression come on, the calomel and opium should be discontinued, and mustard cataplasms and turpentine in the manner already described applied to the extremities. At the same time

stimulating cordials are to be given to support the vital powers, such as thin arrow-root with brandy, hot brandy and water with Cayenne pepper, carbonate of ammonia in five-grain doses, aether, &c., alternated with strong beef tea. But in this stage of the disease no diffusible stimulant will be found so likely to remain on the stomach or to answer the purpose so well as *champagne*: the dose may be one or two glassfuls every half hour or at longer intervals, according to circumstances; indeed, no general rule can be laid down with regard to the dose of this or any other stimulant in such cases; sometimes the state of exhaustion is so great that large doses frequently repeated are absolutely required to prevent irrecoverable sinking, while in other cases small quantities at short intervals answer every good purpose.

It sometimes happens after the vomiting, cramps, and other symptoms of Cholera have been subdued, that the stomach feels tender and sore when the hand is pressed over it, the tongue being at the same time furred, the pulse quick and sharp, and the thirst urgent: we may then presume that inflammation of the stomach has commenced, for the treatment of which we must refer the reader to another part of the work.

During convalescence from this disease, the slightest irregularity in diet or regimen may cause a relapse: at first only a little chicken broth or beef tea with toasted bread should be allowed, and stimulating liquors altogether abstained from.

ASIATIC, PESTILENTIAL, OR BLUE CHOLERA.

This disease is said to have commenced in 1817 at Jessore, a town situated in the delta of the Ganges, about sixty miles from Calcutta. It soon extended throughout the entire province of Bengal and the neighbouring territories, and in the course of the following year reached the utmost limits of the Indian peninsula. It devastated China, the Birman empire, and adjacent countries, in 1820; and in the two following years extended to the numerous islands of the Indian ocean, and also to Arabia, Persia, and the borders of the Mediterranean in Syria. In 1823 it ravaged Astracan, Orenburg, and other towns in the Russian dominions; and after re-appearing at Astracan and Teflis in 1829, crossed the Don and the Ural mountains, and declared

itself in Europe. Advancing to the northward, it arrived at Moscow in 1830, and at St. Petersburg in 1831, and then accompanied the Russian army into Poland. In the same year it pursued its frightful career in Egypt, Austria, Hungary, Bohemia, and Prussia, and in the month of October appeared at Sunderland. In 1832 it continued its destructive course to London and Paris. In 1833 it crossed the Atlantic, and raged in the United States of America, Canada, and in the island of Cuba, but did not extend to the other West Indian islands. It subsequently visited the south of France, Portugal, and Spain; and broke out at Naples and Rome in 1837, in which year it disappeared entirely.

This frightful disease extended from Archangel, in north latitude 64° , to the island of Bourbon, in south latitude 21° ; and from the Philippine islands, in east longitude 125° , to Edinburgh, in west longitude 3° . Its ravages were carried on without change of character or violence in well-ventilated towns situated in hilly and mountainous valleys, and on the banks of great rivers, as the Ganges and Volga, on the arid plains of India and Arabia, and in Siberia and the most northern territories of Russia. It advanced in a direction opposite to that of the most violent monsoons of India, and declared itself under every condition of the atmosphere, when the weather was moist and sultry as well as when it was cold and dry; and even a temperature of 62 below the freezing point produced no effect upon it. It attacked indiscriminately the inhabitants of solitary and little frequented villages, and those of densely populated towns. People of all ages and ranks fell victims to it,—the European, the negro, and the Hindoo, suffered alike; and since the *black death* of the fourteenth century, which is supposed to have destroyed in the course of a few years about a fourth of the human race, there has been no pestilence let loose on mankind at all to be compared to Cholera, either with regard to the rapidity and extent of its progress, or the number of lives which it has destroyed. More than half of all those who were attacked perished; and it is supposed to have carried off at least fifty millions of people.

The nature of the Asiatic Cholera still remains a mystery. The causes assigned for its origin are numerous,—some subtle and deleterious agent combined with the atmospheric air,

astronomical changes, terrestrial emanations, eating bad rice and rye, and various other agents, were supposed to have given rise to it; but nothing satisfactory has yet been found out with regard to the specific cause, nor has the part of the body in which the disease originated been ascertained; and whether or not it was contagious is still a question at issue. There is no doubt, however, that people in easy circumstances of life, who had been well fed and clothed, and lived regularly, were less liable to it than those who subsisted on poor diet and were addicted to drinking spirits. The various causes also mentioned as capable of inducing common Cholera no doubt tended to predispose the system to the influence of the specific cause of the pestilential form of the disease.

This disease in the majority of cases commenced with slight giddiness, a feeling of languor and general debility, an uneasy sensation of fulness, heat, and sickness at stomach, flatulent noises in the bowels, and frequent purging, which was the most prominent symptom of the premonitory stage. These symptoms lasted only a few hours in some cases, in others they continued during three or four days; and when they ceased spontaneously or were checked by timely treatment, the disorder was termed by the French *cholerine*. But it frequently happened that these warning symptoms were neglected or could not be arrested, and the disease ran its course; and in many cases the patients without any previous notice were struck down suddenly and died in the course of a few hours. When it came on suddenly the patient was seized with uneasiness or pain at the stomach, quickly followed by retching and vomiting: the contents of the stomach were first thrown up, and then a thin fluid, characteristic of the disease, resembling rice-water, was discharged in great abundance both upwards and downwards. These symptoms were either accompanied or soon followed by a sense of constriction, anxiety, and weight upon the chest; great restlessness; quick and laborious breathing; and painful spasms beginning first at the fingers and toes, and then extending to the arms, legs, and muscles of the belly, and in many cases to the loins and lower part of the chest. There was a burning sensation at the stomach, and dryness of the throat with great thirst, though the tongue remained cool and moist; and the discharge of urine was entirely

suppressed. The strength gave way rapidly ; the pulse became quick, weak, and at times scarcely perceptible ; and the voice was husky, peculiarly plaintive, or almost extinct. As the disease approached a fatal termination, the extremities became cold and shrunk ; the fingers and toes appeared corrugated as if they had been long immersed in warm water ; the surface of the body was covered with cold sweat ; the eyes were sunk and surrounded with a livid circle ; the face, the hands, and feet, and in many cases the whole body acquired a blue or purple colour, and the pulse could no longer be felt at the wrist. When the patient recovered, reaction took place, the heat gradually returned to the surface of the body, all the bad symptoms ceased, urine was again discharged, and bile made its appearance in evacuations from the bowels ; but instead of this favourable termination, it often happened that reaction was followed by fever which frequently proved fatal. After death, which generally took place in from six to twenty-four hours, the fingers, toes, and lower jaw were in some instances seen to move ; and even the head was observed to shake, and the legs to approach each other. This extraordinary phenomenon has never been known to follow death from any other disease.

TREATMENT. Broussais, Roche, and other eminent French physicians, believing that Cholera arose from congestion or inflammation of the lining membrane of the stomach and bowels, allowed their patients to drink freely of iced lemonade and other cooling beverages, and resorted to both general and local blood-letting ; but in severe cases the blood was black, thick, colder than natural, and would not flow in a continued stream, but fell from the arm in drops without producing any good effect. Dr. Stevens and his followers, supposing that it proceeded from a deficiency of saline matter in the blood, gave large doses of common salt, carbonate of soda, and other neutral salts, and in some cases injected them into the veins. The majority of practitioners, under the supposition that the nervous system was the primary seat of the disease, administered large doses of opium, brandy, æther, ammonia, Cayenne pepper, and other antispasmodics and stimulants. Many were of opinion that the disease was merely a bad type of the common epidemic Cholera of warm climates, in which calomel and opium were found so beneficial,

and gave those remedies in large doses. Some gave croton oil, and others trusted to magnesia, chalk, charcoal, and other absorbent substances. But it would be a thankless task to enumerate the various modes of treatment which were had recourse to, some of them founded on plausible theories, and others altogether empiric, but all alike useless when the characteristic symptoms of the disease were present. The only chance of success from proper remedies depended upon their early administration ; and in the premonitory stage (*cholerine*) already mentioned, there is no doubt that *chalk mixture* with *laudanum* (see page 142) effected a cure in the majority of cases ; but when the disease passed into the second stage or commenced suddenly, there is every reason to believe that little or no benefit was derived from any of the numerous modes of treatment made use of. In fact, the mortality from this epidemic was as great at Naples in 1837, the year in which it disappeared entirely, as it was when it first broke out at Jessore in 1817.

CINNAMON.

Cinnamon is a medicine seldom given alone, but is much used on account of its vegetable, aromatic, and stimulant properties, as an auxiliary to other remedies. Medicines for disorders not of an inflammatory nature, are frequently given in Cinnamon water, which, to a certain extent, covers their disagreeable taste and flavour, and tends to prevent sickness at stomach. The best vehicle for the administration of prepared chalk in cases of simple purging (*diarrhœa*) is Cinnamon water (see page 142). Cinnamon enters into the composition of several aromatic tinctures and cordials, which from their stimulating quality are in high favour with many nervous ladies, who from being long accustomed to their use would feel miserable without them.

The oil of Cinnamon, in doses of three or four drops on sugar, is sometimes given to relieve spasms of the stomach and flatulent cholic.

CITRIC ACID.

Citric Acid is obtained from the juice of lemons and oranges : it is principally used in forming effervescent draughts, and is the

best remedy for sea scurvy when fresh vegetables and lime juice cannot be procured. A pleasant lemonade is made by dissolving thirty grains or more of citric acid in a pint of water, which is to be sweetened with sugar, and flavoured with a drop or two of the essential oil of lemons. (See *Effervescent Draughts.*)

CITRINE OINTMENT.

Citrine Ointment, which is made with lard and the nitrate of mercury, is an excellent application in chronic ophthalmia, specks, and ulceration of the front of the eye (*cornea*). When reduced in strength by an equal quantity of olive oil or lard, it is a very efficacious remedy for old sores, scalded head, and various diseases of the skin. Citrine Ointment, when properly prepared, is of a golden yellow colour.

COLCHICUM AUTUMNALE, OR MEADOW SAFFRON.

Colchicum is an indigenous perennial plant with a bulbous root. There is no better remedy in gout, rheumatism, and some other inflammatory diseases, than the root and seeds of this plant. When given in moderate doses, it soothes the pain and lowers the pulse without acting as an evacuant, but is an active purgative in large doses. It is a mistake to suppose that this remedy does no good unless it purges. The best manner of administering it is in doses suited to the urgency of the case, so as to produce its sedative or soothing effects without bringing on much purging or nausea. In very severe cases it is proper to draw blood before using Colchicum, but in general this is not necessary : it should always, however, be preceded by a purgative of calomel and jalap or colocynth.

The dose of the powdered root in acute cases, is five or six grains every four hours or oftener, until slight purging is produced ; the doses are then to be gradually diminished. The dose of the tincture of the seeds is twenty drops in a little water, to be repeated every four hours or at longer or shorter intervals, according to its effects. Sir Everard Home preferred the wine of Colchicum, the dose of which is from thirty to sixty drops. In

Germany the vinegar of Colchicum is in common use as a diuretic ; the dose is from half a drachm to two drachms in a little cinnamon water.

COLD IN THE HEAD, OR CATARRH.

Cold in the Head arises from inflammation of the lining membrane of the nostrils, and though a disorder of no great consequence in itself, yet when neglected, the inflammation frequently extends to the mucous membrane of the windpipe and air passages of the lungs, and brings on severe cough (see *Bronchitis*), or it may even terminate in pleurisy or inflammation of the substance of the lungs.

The symptoms of this affection are a sense of fulness, obstruction, and dryness in the nostrils, with dull pain and a feeling of weight in the forehead and over the eyebrows : there is at the same time frequent sneezing ; and the tubes which convey the tears into the nose being swollen, the tears are prevented from passing through them, and run down the cheeks ; the eyes appear red and watery : the sense of smell and also that of taste are more or less impaired—the former is often entirely lost during several days ; and the voice becomes nasal. The nostrils, though at first perfectly dry, soon begin to discharge an acrid watery fluid, which sometimes excoriates the entrance of the nostrils and upper lip.

When Catarrh is severe, there are certain symptoms indicative of constitutional disturbance : the patient experiences frequent chills alternating with flushes of heat ; and though his skin feels hotter than natural, he sits near the fire, and complains of being cold. To these symptoms, in many cases, are superadded considerable thirst, loss of appetite, general lassitude, drowsiness, a feeling of soreness of the limbs, back, and loins, with increase of heat and quickened pulse towards evening. In the course of three or four days the discharge from the nostrils diminishes in quantity, becomes thick, yellowish, or greenish, and generally in the course of a week subsides entirely ; but with many persons fresh cold is repeatedly contracted from apparently trivial exposure to changes of temperature or other causes, and in this manner the disease may be kept up during several weeks. In infants, severe Cold in the Head is very distressing : the nostrils

being completely obstructed, the child, after sucking a few mouthfuls, is obliged to quit the breast, and returning to it again and again, becomes at length quite exhausted, and perhaps falls into convulsions. Catarrh is a common attendant of measles, and frequently accompanies scarlet fever and small-pox.

TREATMENT. A slight Cold in the Head is usually checked by taking a basin of warm gruel, or barley water, or any other warm drink, and bathing the feet in hot water during at least twenty minutes at bed-time: this simple treatment, with the assistance of a purgative the following morning, is in general all that is required. In more severe cases the patient should remain in a room as nearly as possible at an uniform temperature, bathe his feet in water as hot as it can be borne, or with some powdered mustard seed added to it, and take one of the following sudorific draughts at bed-time—

No. 89.

Sweet spirits of nitre, a drachm,
Paregoric elixir (English), a drachm,
Liquor of the acetate of ammonia (spirit of mindererus), two drachms,
Camphor mixture, an ounce. Mix.

No. 90.

Dover's powder, fifteen grains,
Liquor of the acetate of ammonia, half an ounce,
Cinnamon water, two ounces. Mix.

The *black draught* (page 32, No. 22), half an ounce of the tincture of rhubarb, or a dose of rhubarb and magnesia, may be taken the following morning. Liquids tend to increase the running from the nostrils, and should therefore be abstained from as much as possible: in fact, the discharge would cease entirely in the course of from fifteen to thirty hours if the patient had sufficient resolution to abstain from drinking; but when the Catarrh is severe there is usually considerable thirst, and other feverish symptoms, which render abstinence from liquids almost impossible.

When infants are affected with Catarrh they ought to be fed with a spoon, and a grain of *calomel* in a teaspoonful of *castor oil* should be given to open the bowels: the popular remedy also of rubbing the nose with lard or oil, is often serviceable. At this age Catarrh seldom continues longer than two days.

COLIC.

COMMON COLIC commences suddenly with griping pain and a sense of twisting about the navel and lower part of the belly; and sometimes the whole belly is affected. The pain is not constant, but comes on in paroxysms, the patient remaining now and again, for a short time, comparatively easy; but the remissions are of short duration, the spasms soon return, and with them the severe wringing pain which the patient endeavours to relieve by leaning his body forward, or pressing his belly against any thing near him. The bowels are constipated; there may be slight nausea and even vomiting; and a frequent though not a constant symptom is a rumbling noise in the bowels, arising from wind, which sometimes accumulates and distends the belly until it feels quite tense: the disorder is then called *flatulent Colic*. In other cases, the belly is drawn inwards towards the spine, and the abdominal muscles are sometimes seized with strong spasms, and are drawn into hard knots which feel like balls in the belly. There is no fever, but on the contrary the skin is cool, the pulse generally weaker than natural, and the face bedewed with perspiration. When this affection continues longer than usual, the pulse becomes very feeble, the skin is covered with cold sweat, and the patient sometimes becomes so weak that he occasionally faints. Common Colic is, however, so far from being a dangerous disorder that it is almost invariably relieved in the course of a few hours.

This form of Colic may proceed from sudden or long exposure to cold, wet feet, hardened or accumulated fœces lodged in the bowels, eating food difficult of digestion, cold drink swallowed too quickly, violent mental emotions, metallic poisons, rupture, and various other causes. It is distinguished from inflammation of the bowels by the absence of fever, and by the pain being relieved on pressure, which always increases it when inflammation is present. It must, however, be kept in recollection that Colic occasionally terminates in inflammation; there is then pain when the belly is pressed upon, heat of skin, thirst, quick pulse, &c. (See *Inflammation of the Bowels*.)

TREATMENT. The first thing to be attended to in the treatment of Colic is to ascertain by a careful examination of the

groins and belly that the symptoms do not arise from rupture, which might in a short time prove fatal, if the necessary means to reduce it were neglected.

If Colic come on shortly after eating crude vegetable or other food difficult of digestion, or after a full meal, an emetic should be taken without loss of time.

No. 91.

Ipecacuan powder, twenty grains,
Tartar emetic, one grain. Mix with a little warm water.

The following draught or a dose of rhubarb and magnesia with a little ginger (Gregory's stomachic powder, see page 48, No. 36), taken about an hour after the emetic has ceased acting, will in general be found sufficient to remove every unpleasant symptom—

No. 92.

Rhubarb in powder, half a drachm,
Tincture of jalap, a drachm,
Aromatic spirit of ammonia, a drachm,
Cinnamon water, two ounces. Mix.

In *flatulent Colic*, which comes on most frequently in those who have their digestive organs deranged from indulging in drinking spirituous and fermented liquors, and in individuals who live principally on vegetable diet, and which is distinguished from the other forms of this disease by the rumbling noise in the belly, the shifting pains and partial distension of the bowels, and by the belly at last becoming quite hard and tense from being distended with air, the best remedies are the assafoetida injection (see page 37) and aromatic cordials with laxatives.

No. 93.

Tincture of cardamom seeds, three drachms,
Henry's calcined magnesia, a large teaspoonful,
Turkey rhubarb in powder, twenty grains,
Peppermint-water, two ounces. Mix.

No. 94.

Compound tincture of rhubarb, half an ounce,
Spirit of anise, two drachms,
Tincture of senna, half an ounce,
Water, two ounces. Mix.

When Colic attacks hysterical females, or if it arise from any

mental excitement, and when the belly is contracted and feels knotted, there is every reason to suppose that the disorder is purely spasmotic, and not of an inflammatory character. In such cases a glass of warm brandy or gin and water, or one of the following antispasmodic draughts, will seldom fail of relieving the patient—

No. 95.

Camphor mixture, an ounce,
Compound spirit of sulphuric æther, a drachm,
Aromatic spirit of ammonia, half a drachm,
Spirit of nutmeg, a drachm,
Water, an ounce and a half. Mix.

No. 96.

Aromatic spirit of ammonia, half a drachm,
Tincture of opium (laudanum), thirty drops,
Compound tincture of cardamoms, half a drachm,
Cinnamon water, an ounce,
Water, an ounce. Mix.

Warm purgatives will be found to answer better than those containing saline medicines: one of the most suitable is

No. 97.

Compound decoction of aloes, an ounce,
Cinnamon water, two ounces. Mix.

In robust, full-blooded persons, there is a risk of inflammation coming on in consequence of Colic; it is therefore the best plan to have recourse at once to blood-letting, which in such cases is the most efficient antispasmodic; and with the assistance of a strong dose of castor oil, usually proves to be the best and most expeditious treatment.

If the bowels have been constipated during some days previous to the commencement of Colic, an ounce of castor oil is to be given in cinnamon water; and in the event of the bowels not being opened in the course of an hour or an hour and a half, the same quantity must be repeated. If this fails, a drop of *croton oil* should be administered with a little crumb of bread in the form of a pill, and repeated every hour until copious evacuations are produced. When severe vomiting accompanies Colic, arising from hardened or accumulated faeces in the bowels, and no remedy will remain on the stomach, the best method of using

croton oil is to rub a drop of it on the tongue every half hour, until the bowels are freely opened.

Warm fomentations applied over the stomach and belly by means of flannel cloths wrung out of a warm decoction of poppy heads, or out of warm water, and rubbing the belly with the following liniment or ointment, will be found useful in all the forms of Colic—

No. 98.

Camphor liniment, two ounces,
Laudanum, two drachms. Mix.

No. 99.

Opium in powder, half a drachm,
Camphor, a scruple,
Lard, half an ounce. Mix.

In concluding these instructions with regard to the treatment of Colic, we would inculcate strongly the necessity of carefully observing whether or not inflammatory symptoms are present, before giving laudanum and stimulating or cordial medicines. The exhibition of stimulants without this precaution, would be upon the principle of double or quit: since, if the disease be Colic, which is a spasmodic affection, remedies of this class would soon put an end to it; whereas, on the other hand, although the pain and griping might be urgent, and though there might be other symptoms resembling those of Colic, yet if the skin be hotter and the pulse quicker than natural, if the pain be increased on pressing upon the belly, and if the tongue be furred in the middle and red at the edges and point, stimulating medicines would certainly aggravate all the symptoms, although they might give relief for a short time.

COLIC FROM LEAD, OR PAINTERS' COLIC. This form of Colic arises from the action of lead on the body, and occurs principally among house-painters, miners, plumbers, colour-grinders, glaziers, gilders, those who are employed in melting lead, and among manufacturers of white lead and other preparations of that metal. It is also caused by drinking wine, cider, spirits, or water containing litharge or the carbonate or acetate of lead in solution. Lead Colic was first traced to its source about a hundred and thirty years ago, in Germany, where it was ascer-

tained that a custom had long existed of sweetening wines with litharge ; and indeed this pernicious method of adulterating wine is far from being extinct : it is well known, for example, that the sweet wines of Italy are frequently adulterated with sugar of lead.

This disease seldom commences suddenly. During three or four days or even longer, before the patient is prevented from attending to his work, he experiences a slight degree of numbness in his hands and feet, a dull uneasy sensation in his bowels, loss of appetite, and sometimes slight purging during a day or two. At length sickness at stomach, head-ache, acute pain in the limbs, costiveness, and griping pain, with retraction of the belly, come on. These symptoms increase in violence as the disease advances ; the bowels remain obstinately constipated ; the pain in the belly and limbs becomes very severe, and extends to the back, loins, and hips ; and, as in common Colic, is not constant, but recurs in frequent paroxysms, which are accompanied in many cases with painful retraction of the testicles. The patient lies on his belly, or presses his hands against it ; he tosses about in bed, and is exceedingly restless ; and his suffering is so much increased in the night, that he is almost if not entirely deprived of sleep. Vomiting of acrid mucus or bile is not an unusual symptom, particularly when the fits of pain reach their height ; but there are no symptoms of fever. The pulse continues natural, unless in bad cases, when it ultimately becomes quick and weak. The countenance throughout the disease appears sallow, and expressive of acute suffering. It does not often happen that the first attack of Painters' Colic is either accompanied or followed by palsy of the limbs ; but in the subsequent attacks, the hands and arms, and sometimes the feet and legs, are paralyzed ; and the right arm is more frequently affected in this manner than the left. The palsy affects the motion of the limbs only, and not the sense of feeling ; and in many cases, the paralyzed parts become greatly emaciated. But although this is both a tedious and painful disease, yet it rarely proves fatal. It lasts generally from eight to ten days, but sometimes much longer, and is very apt to return from re-exposure to its specific cause. The distinctions already noticed between common Colic and inflammation of the bowels are also applicable to Colic from Lead.

TREATMENT. The principal object in the treatment of Lead Colic is to evacuate the bowels ; but this can seldom be effected until the spasmodic action is overcome. In mild cases, the bowels may sometimes be opened by means of purgatives alone ; and it is therefore usual to commence with a dose of *castor oil*, which is to be repeated in the course of four hours with the addition of a drop of croton oil ; and if after the expiration of four hours more, the bowels still remain unmoved, these remedies are to be again repeated. Either of the following purgative clysters may be given at the same time at intervals of three or four hours—

No. 100.

Decoction of linseed (linseed tea), a pint,
Oil of turpentine, half an ounce,
Castor oil, two ounces,
Epsom or common salt, half an ounce. Mix. To be used as an enema.

No. 101.

Barley water or thin gruel, five ounces,
Infusion of senna leaves, four ounces,
Epsom salt, an ounce,
Olive oil, four ounces. Mix. To be given as a purgative enema.

If this treatment produce the desired effect, a copious discharge of hardened faeces, resembling the excrements of sheep or goats, takes place from the bowels, and the patient is in consequence relieved from his suffering. Mild diet afterwards, and gentle laxatives occasionally, soon complete the cure. But in the majority of cases, the bowels cannot be opened by the unaided action of purgatives, and in general after the administration of two or three doses, the stomach begins to reject them ; the injections also are expelled without producing any good effect, while the violent twisting pain of the bowels is increased, and the patient, instead of being relieved, finds his sufferings much increased. It therefore becomes necessary to exhibit antispasmodics and purgatives alternately ; and the best as well as the most powerful remedy of the former class is opium, or its preparation, morphine ; but these remedies, to produce any good effect, must be given in large doses. If the spasms be severe and the patient suffer much, three or four grains of *opium*, or

one grain of the *acetate or muriate of morphine*, may be given with perfect safety ; and in the course of three hours the purgatives already mentioned should be repeated, or the following—

No. 102.

Compound extract of colocynth, ten grains,
Calomel, five grains. Mix, and form into three pills. To be taken as a dose.

The patient will find much relief from sitting in a warm hip bath, or from warm fomentations applied to the belly, and also from rubbing in the liniment or ointment containing opium. (See page 170, No. 105.) The disease seldom resists this treatment, the pain abates, and the bowels are freely opened ; but in some severe cases, it may become necessary to give a second and still larger dose of opium or morphine after an interval of fifteen or twenty-four hours ; and during that period, the administration of purgatives every four hours ought to be steadily persevered in ; and it is advisable to vary them, since from peculiar habits of body or other causes, one purgative may be more suitable than another. Some patients have a great dislike to certain medicines, and have much difficulty in retaining them on the stomach ; and, therefore, when there are several remedies of the same class, there is no necessity in such cases for taking that which would be the most disgusting.

Some practitioners give large doses of calomel, until the disease is subdued, or the mouth becomes affected ; but this, to say the least of it, is a very harsh mode of treatment, and quite uncalled for : nor does it always bring relief, for we have seen patients with saliva running from their mouths in consequence of the system being under the influence of mercury, without having had the slightest evacuation from the bowels, which could not be moved until the spasmodic action was overcome by means of full doses of opium.

Injections of the infusion of tobacco, and fomenting the belly with the decoction, have been employed with the greatest advantage in severe cases ; but this remedy is so powerful and so uncertain in its action, that it cannot be used with safety unless in the presence of a medical man.

Blood-letting is seldom required in this disease ; but in robust individuals it is sometimes necessary to have recourse both to

general and local abstraction of blood in order to prevent inflammation.

During convalescence, that is to say, after the bowels have been freely opened and spasm has ceased, a little castor oil or lenitive electuary ought to be taken daily, with the intention of keeping up the regular action of the bowels, and thus preventing a relapse.

In the palsy of the wrists and hands, which so often follows this disease, the best local stimulants are electricity and rubbing the parts with compound camphor liniment; and the following mixture may be taken internally—

No. 103.

Aromatic sulphuric acid (elixir of vitriol), forty drops,
Quinine, eight grains,
Peppermint-water, eight ounces. Mix. A tablespoonful to be taken as a dose twice a day. (See *Palsy*.)

Every individual habitually exposed to the fumes of lead ought to pay great attention to personal cleanliness. He should wash his hands and face and change his coat every time he quits his work, bathe once or twice a week, or sponge his body every morning with cold or tepid water, avoid eating in an atmosphere impregnated with the vapour of lead, change his linen frequently, and of all things avoid intemperance in drinking spirits, for it is well known that an attack of Lead Colic is generally preceded by excess in drinking.

COLIC IN INFANTS. Infantile Colic sometimes comes on in consequence of the retention of the dark matter called *meconium*, which collects in the bowels during a month or two previous to the birth of the infant. It also arises from too early feeding, improper food, and from the state of the mother's or nurse's milk, which may be deranged in consequence of bad health, an improper manner of living, or from certain moral causes.

An infant affected with Colic is very restless, screams frequently, and appears in great distress. The lower extremities are drawn up upon the belly, the bowels are constipated, there is generally puking, and the belly is either more or less distended with gas.

TREATMENT. Although Colic is sometimes caused by *meconium*

being retained and becoming acrid and irritating to the bowel, yet this seldom happens when the mother is able to suckle the infant; but when a nurse is employed for that purpose, it is by no means an uncommon occurrence. This is owing to the quality of the milk, which, when first secreted, is sufficiently laxative to carry off the *meconium*. It is, however, very improper to interfere with the bowels unless we are certain that it is really necessary to do so; and yet there is nothing more common than to find nurses forcing castor oil down the throats of infants within half an hour or an hour after they are born: indeed, this is frequently the first thing they are allowed to taste. The consequence is that griping and purging are very often brought on, then a little paregoric elixir or Dalby's carminative is given to soothe the bowels; this of course produces costiveness, to relieve which the nurse deems another dose of castor oil, or perhaps a little calomel, necessary; and thus the poor infants are tormented in consequence of the absurd meddling of nurses, many of whom think that they are not doing their duty unless they are frequently employed in dosing infants with medicine and feeding them with thick gruel, arrow root, and other substances which at that early age their stomachs cannot possibly digest; flatulency necessarily follows; then come the symptoms indicative of Colic,—screaming, tossing of the arms, distended belly, and the other signs already mentioned; the mother naturally becomes much alarmed; and the doctor is of course sent for, perhaps in the middle of a cold night in winter. The treatment to be adopted in such cases is very simple. The following enema is to be given as soon as possible—

No. 104.

Warm water, a wineglassful,
Peppermint-water, two teaspoonfuls,
Castor oil, a teaspoonful,
Tincture of assafœtida, from ten to twenty drops. Mix.

This injection usually gives immediate relief; but if it fail in doing so, a small teaspoonful of *Hollands* gin with a little sugar and warm water, or from eight to twelve drops of the *tincture of assafœtida*, or the same quantity of *sweet spirits of nitre* in a small quantity of water, should be given. The warm bath, and

rubbing the belly with the following liniment, are to be resorted to if necessary—

No. 105.

Camphor, a drachm, to be dissolved in
Olive oil, an ounce and a half,
Laudanum, a drachm. Mix.

This treatment rarely fails in relieving the little patient, who soon falls fast asleep. The following powder may be given some hours afterwards in sugar and water, or the bowels may be opened by means of a little manna dissolved in warm milk—

No. 106.

Calcined magnesia, six or eight grains,
Rhubarb, two grains,
Anise seed, in powder, two grains. Mix.

COLOCYNTH, OR BITTER APPLE.

This plant is a native of various parts of Europe and Africa : the dried fruit, which is the only part of it used in medicine, is imported from the Levant. Colocynth is seldom used alone, on account of its violent purgative action ; the preparation of it in common use is the *Compound Extract of Colocynth*, which is composed of the spirituous extract of Colocynth, aloes, scammony, cardamom seeds, and Castile soap. This compound acts chiefly on the large intestines (*colon and rectum*), and is one of the best purgatives we possess. It is very generally employed to keep the bowels regular, and enters into the composition of nearly all the purgatives and pills used for that purpose. The dose is one, two, or three pills, containing each five grains. The compound extract of Colocynth is very often used, particularly in warm climates, in combination with calomel in the following form—

No. 107.

Compound extract of Colocynth, forty-eight grains,
Calomel, twelve grains. To be well mixed and divided into twelve pills, of which one or two are to be taken as a dose at bed-time.

The following injection is often very serviceable in cases of obstinate constipation of the bowels and in Colic—

No. 108.

Take of compound extract of Colocynth, two scruples,
Soft soap, an ounce,
Water, a pint. Mix, and rub them together.

The French consider Colocynth to be a very uncertain remedy, and are surprised that it should be so extensively employed in this country. The compound extract is nevertheless a mild and effectual opening medicine, and is deservedly much esteemed, both at home and throughout our extensive colonial possessions.

CONGESTION.

Having been frequently under the necessity of making use of this term, a brief explanation of it may be deemed necessary. Congestion, according to the usual acceptation of the word, signifies a preternatural fulness or accumulation of blood in the vessels of any organ, part, or region of the body, arising either from increased action of the heart, or from deficient vital power in the part or organ itself, in consequence of the free circulation of the blood being more or less impeded by mechanical or other causes: hence the division of Congestion into two forms, the *active* and *passive*. An organ may be in a state of active or passive Congestion, and still be in other respects in a perfectly healthy state. The effects of Congestion vary not only with regard to the violence of the cause which produces it, but also according to the importance and nature of the congested organ. For example, a full-blooded, short-necked individual may increase the heart's action by excess in eating and drinking or by any unusual bodily exertion, and thus determine the blood to the head and cause Congestion, which may be to such an extent as to force the blood out of the vessels, either by rupturing them or otherwise, and thus cause apoplexy and death; or the distended vessels, by pressing upon the brain may produce a state of stupor and insensibility, which may continue until means are adopted to remove the excess of blood, or until nature restore the balance of the circulation. But Congestion may take place repeatedly in other organs without producing any bad effect: for instance, during the fits of ague or intermittent fever, the blood accumulates in the liver and spleen until they become considerably enlarged,

but during the intermissions, these organs resume their natural size, and the blood again circulates as usual. Spitting of blood from the lungs, and vomiting of blood from the stomach, are frequent consequences of Congestion, but in general it is either a prelude to inflammation, or ends in restoration of the circulation to a healthy state, which is by far the most common termination.

CONSTIPATION.

There are few affections to which the body is liable of more frequent occurrence than Constipation of the bowels; and though this disorder is of comparatively little consequence when only occurring occasionally, yet when it becomes habitual, it not only interferes greatly with personal comfort, but often paves the way for disorders of a more serious nature. The stomach and bowels are no doubt constituted by nature to perform their functions in as perfect a manner, and with as much order and regularity as other organs; and if they are more frequently deranged, this is owing in the great majority of cases to our habits and manner of living, which are frequently such as to impede the digestive organs in the due performance of their office.

Females, in consequence of the sedentary lives which they usually lead, persons of the melancholic temperament and spare habit of body, old people, and those who from habit or necessity do not take sufficient exercise, are most subject to habitual costiveness. Sleeping too much, lying too long in bed, long-continued trouble of mind, neglecting to obey the calls of nature, abuse of purgative medicine, excessive perspiration, and increased secretion of urine, also tend to constipate the bowels. But the most common of all the predisposing causes is improper food, which, reaching the bowels in an imperfectly digested state, is incapable of exciting them to a healthy and regular action: the same effect is also produced by excess in eating. In general, the immediate cause of Constipation, when it does not depend upon mechanical obstruction, is either a deficient secretion from the lining membrane of the bowels, and from the organs the excretory ducts of which open into them, more especially the liver; or from a want of action or tone in the muscular coat of the bowels.

In general, persons in a state of health have their bowels evacuated once every twenty-four hours; but some have two evacuations within that period, while others have only one every two or three days, and individuals have been known to enjoy good health during many years without having occasion to evacuate the bowels oftener than once a week, so that Constipation must be looked upon with relation to the constitution or the acquired habits of the individual.

Impaired or torpid function of the bowels may cause their contents to accumulate in any part of the intestinal canal; but the large intestines, particularly the colon, which runs across the belly in an arched form, and is bent into an S shape on the left side, are the most common seat of the accumulation.

The usual symptoms arising from a constipated state of the bowels, are head-ache, which is confined in most cases to the forehead, loss of appetite, flushing, or a feeling of heat in the face from any slight cause, a sensation of weight in the belly and loins, foul tongue, and in some people languor and listlessness, in others irritability of temper.

Habitual costiveness not only induces great and serious inconveniences, but when long neglected, may give rise to various formidable diseases which frequently prove fatal. The most common consequences of Constipation are giddiness, ringing in the ears, head-ache, tension of the bowels, the disorder called *whites*, fistula, stricture of the lower bowel (*rectum*), eruptions on the skin, and various nervous diseases, such as hysterics, St. Vitus's dance (*chorea*), and hypochondria: and in children it not unfrequently precedes water in the head. Straining at stool has been known to bring on apoplexy, rupture, and in children and delicate females, spitting of blood.

TREATMENT. There is nothing of more importance as a remedial means in habitual costiveness than regular exercise in the open air, more especially when taken before breakfast and conjoined with early rising: it assists greatly in promoting the internal secretions as well as the secretion from the skin, and by giving regular and sufficient exercise to the muscles, is often sufficient of itself to restore the natural action of the bowels. It is also of great consequence to acquire a regular habit of evacuating the bowels daily at a certain hour, which, in general,

is found to be most suitable and conducive to health shortly after breakfast ; and even when the bowels do not intimate the necessity of complying with this habit, they should nevertheless be solicited daily to discharge their contents. But of all remedial means, a proper regulation of diet is one of the most essential, since unless the quantity as well as the quality of the food is suited to the state of the digestive organs and the habits and mode of life, it is not to be expected that the bowels will perform their functions in the same orderly manner that they naturally do in those whose habits are regular, and who adapt their diet to the wants of the system. The diet which generally agrees best with people is plain animal food, either roasted or boiled, taken in moderation, with a due proportion of vegetable substances, such as potatoes, rice, spinach, broccoli, carrots, and turnips. Porridge, and cakes made from oatmeal, brown bread, bread made with wheat and rye flour in equal parts, or only a third of the latter, stewed prunes, various kinds of ripe fruit, and drinking malt liquor, have with many people the effect of keeping the bowels moderately open ; but an opposite effect is produced by various substances difficult of digestion, as badly baked bread, and very white bread, which frequently contains a proportion of alum, pastry, heavy puddings, rich cakes, cheese, and all kinds of nuts.

It may not be a difficult task to convince those who are affected with indigestion and Constipation of the bowels of the advantage to be derived from proper diet and regimen, but it is by no means so easy to prevail on them to change their manner of living ; indeed a large proportion of the community is so situated with regard to business and the various pursuits of life, that the laws which nature clearly dictates as necessary for the maintenance of the digestive organs in a healthy state are neglected, or cannot be complied with : various derangements follow as a matter of course, and none more frequently than Constipation of the bowels, which from being at first simple and easily managed, becomes at last habitual, in consequence of the irritating and debilitating effects of strong laxative medicines, than which in such cases nothing can be more injurious.

When Constipation comes on in people otherwise healthy, the foecal matter is generally lodged, as has been already mentioned,

in the lower bowels, and this is either owing to a want of muscular action in the bowels, or to deficiency of the mucous and other secretions necessary for the purpose of lubricating the faeces so as to facilitate their expulsion ; or it may arise from both causes combined. In such cases an enema of a pint of tepid water, either in conjunction with a tablespoonful of olive oil, or a dessert spoonful of common oil or of *Epsom salt*, will be found to relieve the bowels, and prevent the necessity of irritating the stomach and small intestines with strong purgatives ; but if a prejudice exist against this method of opening the bowels, or in the event of its not answering the purpose, a little *castor oil*, *Gregory's* stomachic powder (see page 48, No. 36), or one, two, or more of the following pills may be given at bed time—

No. 109.

Take Socotrine aloes and scammony in fine powder, of each thirty-five grains,
Ipecacuan powder, twelve grains,
Sulphate of iron, four grains,
Castile soap, twenty-four grains. Mix, and divide into twenty-four pills.

No. 110.

Take of compound extract of colocynth, forty grains,
Extract of henbane, twelve grains. Mix, and form into twelve pills.

No. 111.

Take of compound extract of colocynth, a scruple,
Powder of jalap, a scruple,
Castile soap, twelve grains,
Croton oil, three drops. Mix, and divide into twelve pills.

The Constipation which arises from a deficiency of the contractile or peristaltic power of the bowels is common during convalescence from acute diseases, and in those who are much reduced from previous illness ; in females, more especially in those who are chlorotic, or in other words, affected with green sickness ; in aged persons, children, and people of sedentary habits. This form of costiveness is also a common consequence of torpor of the brain and paralytic affections, and is frequently met with in people who live on too spare diet, as well as among those who eat too much, and is a fruitful source of various complaints. It gives rise to piles,—to the fixed pain in a particular

part of the head, especially the forehead, commonly called nervous head-ache, a disorder to which females are very liable,—to the habitual swelling of the belly attended with flatulence, indigestion, and general uneasiness so common in females, old people, and young children,—and the disease of females called the whites is not only kept up, but very often caused by this species of Constipation. The treatment consists in the frequent administration of gentle purgatives with tonics, such as two or three teaspoonfuls of *Rochelle or Epsom* salt with a little tincture of orange peel in a teacupful of chamomile tea, taken early in the morning, or one or two of the following pills every eight or ten hours—

No. 112.

Compound extract of colocynth, thirty-six grains,
Sulphate of quinine, twelve grains. Mix, and form into twelve pills.

No. 113.

Compound rhubarb pill (in mass), fifty grains,
Sulphate of iron, six grains. Mix, and divide into twelve pills.

When Constipation depends on torpor or functional derangement of the liver, which is known by the dingy yellow or muddy appearance of the eyes, sallow countenance, furred tongue, difficult digestion, languor, and depression of the system, and by the pale or clay colour of the evacuations, preparations of mercury are the most efficacious remedies.

No. 114.

Blue pill, from five to ten grains,
Compound extract of colocynth, the same quantity. Mix, and form into pills, to be taken as a dose at bed-time, and the black draught (see page 32, No. 22) the following morning.

These remedies in many cases require to be followed up by small doses of blue pill.

No. 115.

Blue pill, twelve grains,
Extract of henbane, twelve grains,
Extract of gentian, twenty-four grains. Mix, and form into twelve pills.

One of these pills is to be taken in the morning, another at

mid-day, and a third at bed-time, each to be washed down by two or three tablespoonfuls of the infusion of calumba root. (See page 109, No. 81.) This treatment continued during a week or longer, according to circumstances, along with mild diet and a moderate use of dry Sherry or Madeira wine, has generally an excellent effect.

If the bowels have been allowed to remain in a constipated state until a bearing down sensation at the lower bowel comes on, with frequent desire to go to stool, and perhaps occasional discharges of small hard foecal masses, the following draught or electuary taken every four or five hours will answer better than strong purgatives, which might irritate the bowels and bring on inflammation—

No. 116.

Castor oil, two or three teaspoonfuls beat up with the yolk of an egg,
Tincture of henbane, fifteen drops,
Peppermint-water, two ounces. Mix.

No. 117.

Electuary of senna, two ounces,
Jalap, a drachm,
Extract of henbane, fifteen grains,
Ipecacuan in powder, six grains,
Syrup of ginger, an ounce. Mix. A teaspoonful of this electuary to be given as a dose every four or five hours.

Emollient clysters of decoction of marshmallow, or of linseed with olive oil, should be frequently administered, and the belly well rubbed with the following liniment—

No. 118.

Lard, half an ounce,
Laudanum, a drachm,
Oil of turpentine, a drachm,
Oil of caraway, half a drachm. Mix.

If irritation of stomach and vomiting supervene, ten or twelve drops of *croton oil* should be well rubbed in over the belly: this remedy often succeeds in relieving obstinate costiveness when medicine cannot be retained on the stomach. If the pulse become quick and hard, and pain be felt at the belly, increased

on pressure,—if the skin be hot and the tongue furred in the middle and red at the edges, the patient should be bled from the arm, and twenty or thirty leeches applied over the abdomen, to be followed by warm fomentations (see *Inflammation of the Bowels*, page 67), and the emollient injections and gentle purgatives, as above, continued in frequently repeated doses until free discharges from the bowels take place, which soon relieve the patient from every unpleasant symptom.

The bowels of new-born infants are frequently deranged by the unnecessary use of laxative medicines. There is no doubt that the efforts of nature are in general sufficient to relieve the bowels from the *meconium* or dark-coloured matter which accumulates in them previous to birth; but this, however, is not according to the doctrine of the generality of nurses, who set to work as if nature had nothing to do with the matter, and give castor oil, or some other purgative, within an hour or two after the infant is born: the consequence of this unnecessary interference is that the bowels are for some time afterwards rendered weak and irregular. (See *Colic in Infants*, page 168.) If the *meconium* be not discharged within a reasonable time, or if the belly become slightly distended, it is then proper to give a gentle dose of castor oil, about half a teaspoonful, or a little manna dissolved in warm water, which, with rubbing the belly gently with the hand, will be sufficient to open the bowels. In ordinary cases of Constipation in infants, an injection of from four to eight tablespoonfuls of tepid water, with a little olive oil, will in general have the effect of relieving the bowels; if not, a teaspoonful of castor oil, or three grains of rhubarb, with from six to ten grains of Henry's calcined magnesia, given internally, will answer the purpose. But mothers and nurses are not now satisfied with the above or other mild remedies in such cases; they prefer giving calomel on account of its being easily administered, and because children are said to bear it well, that is to say, because it neither kills nor salivates them; and they consider themselves authorised to make use of this remedy whenever there is derangement of the bowels, which in the great majority of cases is caused by improper diet and nursing. But it is not to be supposed that the delicate lining membrane of the stomach and bowels can with impunity come frequently in contact with this powerful and

irritating mineral; and if its bad effects are not immediately experienced, they are not long in declaring themselves in frequent disorders of the digestive and biliary organs, which are ascribed to the delicate constitutions of the little patients, and not to the calomel, which is still considered a specific even for the disorders which it has induced. Calomel is no doubt an invaluable remedy in various diseases of children, but it is now given indiscriminately to such an extent that there is every reason to believe that, upon the whole, the harm which accrues from its abuse overbalances the good derived from its timely administration. We also think that there is much truth in the remark which of late years has frequently been made, that those who have taken much calomel during childhood suffer more than others from indigestion and functional derangement of the liver in after life.

When children, however, are troubled with costiveness arising from a deficiency in the secretion of bile, which is shown, as has been already mentioned, by scanty, pale, or clay-coloured evacuations, a grain of calomel with three or four grains of rhubarb, given every night at bed-time, for three or four nights, is the most appropriate remedy that can be used.

Having now pointed out the usual causes of costiveness, and the remedies which we deem the most suitable for relieving its ordinary forms, we shall conclude by reminding the reader that in general the healthy action of the bowels may be effectually restored with little assistance from medicine, by taking regular exercise in the open air, by adopting diet suited both in quantity and quality to the state of the digestive organs, by endeavouring to procure an evacuation daily at the time the bowels are found most frequently to act, by sponging the body every morning with cold or tepid water, or the occasional use of the cold or tepid bath, and by keeping the mind tranquil. These means, when steadily persevered in, seldom fail in keeping the bowels in order; and if from any accidental cause they become constipated, recourse should be had to an enema of warm water in which a little soap is dissolved, or two or three of the pills (page 175, No. 109), in preference to strong purgatives.

CONVULSIONS.

When we consider the tender frame of the young child, the very great size of its nervous system as compared with the rest of the body, and when we reflect on the fact that all impressions made upon the infant are new, and therefore the more likely to act with force upon its nerves, we cannot be surprised at the frequency of convulsive disorders at a very early age. A very large number of children under eighteen months of age are attacked and destroyed by Convulsions. After the age of two years convulsive diseases are less frequent and dangerous, partly because the child's frame is then more robust, but chiefly because the nervous system has become accustomed to the impressions of various substances which, before that period, acted upon it with very great energy.

Convulsion consists in an alternate and involuntary contraction and relaxation of the voluntary muscles; in a state of health we can govern the motions of certain muscles by our will; in a state of disease (convulsive) the will no longer governs the motions of these muscles, but they contract and become relaxed with more or less violence and rapidity, and in spite of the will. Hence, although Convulsions are apparently a disorder of the muscular system, they are really a disorder of the nerves, which, on account of certain reasons to be presently noticed, no longer convey the commands of the will to the muscles.

Convulsions are distinguished into two kinds, the *idiopathic* and the *symptomatic*; this is an important distinction, particularly with reference to the treatment. Convulsions are *idiopathic* when they depend on some disease affecting directly the brain or spinal marrow; they are *symptomatic* when they arise from some disorder of the human frame which acts indirectly or remotely upon those parts of the nervous system. A simple illustration will serve to explain the difference between idiopathic and symptomatic disorders: thus, a man swallows poison or receives a violent blow over the region of the stomach: frequent vomiting is the consequence; this vomiting is idiopathic, because it depends on an injury inflicted directly upon the stomach. But if vomiting should be produced by a sprain of the ankle, by an unpleasant smell, &c.,

then the vomiting is said to be symptomatic, because it is a symptom of some disorder in a distant part which affects the stomach indirectly. Thus it is with Convulsions; they may depend upon a diseased condition of the brain, but more commonly they arise from some disorder of the bowels, or some irritation of the gums, skin, &c., which acts indirectly on the nervous system, and excites convulsive paroxysms. This latter we shall now proceed to describe, and then explain briefly the causes and treatment of Convulsions in children. In some cases the fit is very slight, and might escape any other notice than that of an anxious mother; it is merely marked by twitchings of the face; rolling of the eye-balls; a spasmodic shutting of the mouth; clenching the hands, or by irregular and rapid movements of various muscles of one side of the body. In many other cases, however, the convulsive paroxysm is more severe and better marked; the child, either suddenly or after some premonitory symptoms which shall be presently noticed, is seized with an universal spasmodic contraction of the muscles, particularly visible about the face; the eyes are staring, or turned forcibly up under the eye-lids; the face is distorted, and the tongue occasionally protruded from the mouth; the respiration is difficult and laborious; the face is of a brown-red or purplish colour; the fingers are clenched, and the arms are often twisted about in a variety of directions. When this fit has lasted for some time the Convulsions gradually become less violent, the face assumes a natural appearance, and the exhausted infant falls into a deep sleep, or into a state of stupor when the attack has been unusually severe. The fit may last for a few minutes only, or for several hours, and may return many times in the day or not appear again before many weeks.

Children are often seized with Convulsions during apparent health, and without any warning symptoms; but in a majority of cases a certain change may be noticed in the countenance and habits of the little patient, which should put us on our guard, and make us suspect that some disorder of the nervous system is threatened. The face is alternately flushed and pale; the countenance brightens up for a time and then becomes dull or stupid; there is a dark circle round the eyelids, and the eyes are fixed or staring; the sleep is disturbed; the breathing irregular; the limbs become occasionally stiff, the fingers clenched, and the

infant's head is sometimes thrown back from the breast, as if he were suddenly unable to swallow the milk. These warning symptoms indicate the approach of Convulsions.

CAUSES AND TREATMENT. Convulsions may be produced by a very great variety of causes, and their treatment must necessarily be different according to the cause which has excited them; we shall therefore endeavour to arrange the causes of Convulsions into several groups, and shall describe under each group the treatment which is proper for that class of cases. But first we must remind the reader that Convulsions may depend either directly upon some disease of the brain, or upon some cause which acts indirectly on the nervous system, through other parts of the body; when they are caused by disease of the brain, Convulsions are much more dangerous and difficult of cure than when they are the indirect effect of some bodily disorder, because when the latter (worms for example) is removed, the Convulsions disappear with it, but in the former case we must cure the disease of the brain, which, as every body knows, is no easy matter.

Convulsions from disease of the brain or spinal marrow. Convulsions often depend upon the presence of too much blood in the brain (*congestion*); upon inflammation within the head or spinal canal; and finally, on the existence of scrofulous tumours in the brain or the membranes which surround it.

Convulsions are more frequently excited by irritation or congestion of the brain in infants than in children over eighteen months of age. We may suspect them to arise from irritation when the infant is extremely fretful, and appears to be unable to bear light, sound, or any impression made upon his senses; when he frequently carries his hand to the head, or (if able to speak) when he complains of head-ache, and when the sleep is disturbed by starting, sudden fits of crying, &c. If the brain be much oppressed by blood, then the child is dull and very drowsy, instead of being excited; the pulse is slow, and the respiration is often broken by sighing; the face is commonly pale, but occasionally flushes up; the tongue is clean, and the bowels are constipated. When the fits have continued for some time, the child after each paroxysm falls into a state of stupor or complete insensibility. The treatment, in these cases, must be active, lest the irritation should pass into inflammation of the brain. Bleeding, purging,

and the warm bath, are the chief means on which we have to rely. The child's hair should first be cut off, and a cold lotion be applied to the head, while a warm bath is being prepared. If the child be strong, the face full, and the complexion healthy, as they often are in cases of this kind, a few ounces of blood may be drawn from the arm, or (in infants) one or two leeches may be applied to the temples: as soon as a warm bath (at 96 degrees) can be procured, the child is to be placed in it, sitting up, for about twelve or fifteen minutes, and while in the bath a stream of cold water may be allowed to fall upon the head from a jug, at about the height of two feet; by this latter means the head will be kept cool, and the blood prevented from flowing too quickly to the brain under the action of the bath. After the use of bleeding and the warm bath, free purging must be had recourse to; this may be effected by one or two grains of calomel with four to six grains of rhubarb, for a child not more than two years of age; and by calomel with scammony, or any other powerful cathartic, for older children. Should the convulsive fits recur, the warm bath and purgatives are to be repeated; a blister may be placed behind each ear, and if the child continue strong, one leech or two may be again applied to the temples; but, whenever a doubt exists, it will be always better to avoid taking blood from very young children.

Convulsions frequently occur during the existence of chronic or acute dropsy of the brain, and are then nothing more than one of the symptoms of those diseases, to the history of which we must refer the reader. When Convulsions depend on the presence of scrofulous tumours in the brain, they are generally of long standing, and attended in the intervals between the fits by periodical head-ache, vomiting, constipation of the bowels, palsy of some of the limbs, squinting, and very often by partial or total blindness. Cases of this kind are incurable.

Convulsions from the state of the bowels. The whole of the inside of the stomach and bowels is furnished with innumerable nervous filaments, which render this portion of the body very sensible of any irritating or injurious substance. When any of these nervous filaments are irritated or injured the impression is conveyed to the brain or spinal marrow, and convulsive movements of the muscles may be the result, just in the same way as

hysterical laughing, and even Convulsions may be occasioned by tickling the nervous filaments which are distributed to the soles of the feet. Convulsions of this class are excited by various causes, of which the following are the principal: retention of the *meconium*; the presence of irritating matters in the stomach or bowels; unwholesome milk, or the milk of a nurse who is given to drinking spirits, or subject to violent passions, errors of diet, long-continued bowel complaints, worms, the injudicious administration of laudanum, Godfrey's cordial, Dalby's carminative, or the use of stimulating fluids (gin, wine, &c.), to which the poorer classes of society are so much addicted. In many of these cases we can cure the disease by avoiding the cause of it; in many others we must remove the cause by medicines. Thus, when the bowels are irritated by the presence of meconium, they should be evacuated by mild doses of castor oil, or by a clyster of olive oil or soap-water. If we have reason to suspect that the nurse's milk is bad, another should be procured, or even spoon-feeding is better than the milk of a drunken, debauched nurse; when the belly is swollen, the bowels confined, and symptoms of disordered stomach or intestines appear, then an emetic of oxymel of squills or hippo wine should be administered, and the bowels afterwards cleared out with any purgative medicine that may be at hand. Frictions with flannel steeped in camphorated oil may be made over the belly. When the bowels have been well cleared out, doses of castor oil with a drachm or two of fennel-water, or a quarter of a drachm of the syrup of poppies, may be occasionally given, in order to soothe the general system of the child and dispel the tendency to Convulsions. For the treatment of convulsive fits from worms we refer to the latter word.

It is well known to all parents and persons who are accustomed to the care of children, that Convulsions frequently occur during the periods of teething: here again, to prevent repetition, we must request of the reader to seek the word "teething," where he will find the necessary information; we shall only mention here, that teething may be suspected as the cause of Convulsions, whenever the latter occur at the periods of the appearance of the first teeth (from the seventh to the thirtieth month), or at the time when the second set of teeth replace the old ones; when an increased heat and secretion of saliva in the mouth

show that the gums are irritated; and above all, when the latter are tumid, red, and tender to the touch over the tooth which is evidently about to come forth. In all these cases the gums should be freely divided down to the teeth, and the scarifications (as they are called) repeated whenever convulsive symptoms are threatened. In Convulsions from teething, and indeed from any other cause, the fits are often attended by irritation of the brain or congestion of blood within the head; when such is the case, blood-letting and the means already described must be employed without delay.

Convulsions during eruptive disorders, diseases of the skin, or other complaints. Many eruptive diseases, such as measles, scarlatina, and small-pox, are ushered in by convulsive fits; generally speaking, these are not of a dangerous kind, and cease with the appearance of the eruption on the skin; but when they are attended by signs of too much blood in the head or come on during the course of hooping-cough or croup, then leeches to the temples, the warm bath, with cold effusion on the head, free purging and blisters or mustard poultices to the feet, will be found to be most serviceable. Convulsions which follow the disappearance of an old disease of the skin usually depend upon the same cause, and are to be treated in the same manner.

Finally, children whose strength has been exhausted by excessive loss of blood, or by any long disease (especially bowel complaints), are often attacked by convulsive fits. Here the treatment must be of a different kind from that already mentioned; while the head is kept cool, and the bowels are acted upon by the use of mild purgatives, we must endeavour to support the strength by tonics combined with antispasmodic remedies. The following medicines may be given in cases of this kind—

No. 119.

Take of infusion of cinchona bark, one ounce,
Compound tincture of cardamoms, fifteen drops,
Tincture of hyoscyamus, fifteen drops. A mixture: to be given twice a day to a child more than four years of age. For younger children, the mixture may be divided into two parts, and one given as a dose. Or,

No. 120.

Infusion of Calumba bark, one ounce,
Fennel water, one half a drachm,
Extract of henbane, one grain and a half. To be taken twice a day.

Notwithstanding our utmost efforts, it must be confessed that we are often unable to determine the cause of Convulsions in children. When such is the case, we have nothing left but to administer antispasmodic medicines. A great variety of these are employed and recommended by medical men. At the Children's Hospital, Paris, the oxide of zinc is a favourite remedy in doses of one grain, mixed with a little powdered sugar. The dose may be gradually increased to ten or twelve grains in the day (for children above two years of age) in the space of a fortnight. The oxide may be advantageously combined with extract of hyoscyamus, thus—

No. 121.

Oxide of zinc, one grain,
Extract of hyoscyamus, two grains,
White sugar, in powder, twenty grains,
To be gradually increased, until the child take six grains of the zinc and twelve of the hyoscyamus in the day.

The other antispasmodic remedies which may be employed are camphor, valerian, and the compound æthers, assafoetida being too nauseous a medicine to be given to children.

Dr. Underwood speaks well of musk, which may be given in the following manner—

No. 122.

Musk, one drachm,
Gum arabic, one drachm,
White sugar, one drachm,
Water, six ounces. Mix.
From one to two teaspoonfuls every three hours.

Dr. Copland has, for many years, employed an infusion of green tea in cases of this kind with considerable benefit. During the use of antispasmodic medicines, the bowels should occasionally be opened by mild laxatives, the spine of the back should be occasionally rubbed with a stimulating liniment, and a blister should be kept open on the nape of the neck for a week, then allowed to heal and opened again; or its place may be supplied by a seton when the child is four or five years old.

The preventive treatment of Convulsions will naturally be suggested by a consideration of the causes which most com-

monly produce them. All errors of diet should be avoided ; the head kept cool, the feet warm, and the bowels open. Whenever any signs of congestion of the blood in the head appear, they should be combated by active purging, cold lotions, and leeches.

COPAIVA.

The *Balsam of Copaiva* is obtained by making incisions in the trunk of a lofty tree (*Copaifera officinalis*), which grows in Brazil, Guiana, Venezuela, and other parts of South America, and also in Jamaica, Trinidad, and Martinique. This balsam is not easily obtained in a pure state, being frequently adulterated with castor oil, and sometimes with rape oil ; and there is no doubt that it is manufactured both in London and Paris to a very considerable extent. *Copaiva* was formerly employed as a remedy in disorders of the mucous membranes of the bowels and lungs ; but *Gonorrhœa*, and its sequence, *Gleet*, are now the only diseases in which it is used. The dose is from twenty to thirty drops or more, either taken on a little sugar or beat up with the yolk of an egg, or a little mucilage of gum arabic. The French use it enclosed in thin gelatinous capsules, by which means the disagreeable taste, and also the odour, to a certain extent, are concealed. These capsules are now sold in many of the chemists' shops in London and other large towns, under the name of *Mothe's Gelatine Capsules* ; many people cannot swallow them on account of their bulk, otherwise this is certainly the best plan of taking this disgusting remedy. (See *Gonorrhœa*.)

COPPER.

The only preparation of this metal in general use is the *Sulphate of Copper* or *Blue Vitriol*, which is principally used externally to destroy "proud flesh," and is sometimes applied to the inner surfaces of the eyelids in chronic ophthalmia. Dr. A. T. Thomson recommends a grain of blue vitriol dissolved in an ounce of distilled water, as an injection in gonorrhœa. It should be employed, he says, on the first appearance of the symptoms, and continued twice a day for a short time, after they have disappeared. It may be given in a dose of from ten to fifteen grains in three ounces of water, as an emetic in cases of

poisoning, when tartar emetic and sulphate of zinc (white vitriol) have not had the effect of producing vomiting. In the West Indies we have used this remedy with the greatest advantage in chronic dysentery, in the following form—

No. 123.

Blue vitriol, or sulphate of copper, a quarter of a grain,
Acetate of morphine, the same quantity,

Extract of gentian, four grains. To be made into a pill, and taken in the morning. The dose to be repeated at bed-time. The dose of the sulphate of copper should be gradually increased to the extent of a grain to a grain and a half, and the morphine to the extent of half a grain.

CORMS.

This term is given to the circumscribed, horny-looking excrescences of the toes and feet, which are caused by wearing improperly made boots or shoes. Corns are for the most part situated on the outside of the little toes, on the soles of the feet, and between the toes; and in some individuals all the prominent parts of the toes to which undue pressure has been long applied, are invaded by them. They consist at first of thickened cuticle or scarf skin, which for some time gives little or no trouble, with the exception of slight pain and tenderness after much walking; but when the cause is kept up, that is to say, when tight boots or shoes continue to be worn, a conical-shaped root is formed, having a sharp point, which pierces deeply, and when the pressure is greater or continues longer than usual, causes acute pain. A Corn is of itself inorganic and insensible, the pain which it occasions being in the surrounding parts, which in warm weather become unusually red, distended, and tender to the touch; and in moist or rainy weather the pain is augmented in consequence of the Corn being enlarged from absorption of moisture, thereby causing it to press with increased force on the part immediately underneath. Corns are not at present so common as they were formerly, particularly in females; and this appears to be owing in a great measure to the improved form of the shoes which are now worn. When high-heeled shoes were fashionable, nearly the whole weight of the body was thrown upon the toes, which were thrust into narrow-pointed shoes, incapable of holding them

without one toe being forced over another; and Corns and deformity of the toes were the inevitable consequences of this unnatural and absurd custom.

TREATMENT. The first thing to be done is to remove the cause of Corns by wearing boots and shoes neither too large nor too small, and constructed as nearly as possible of the shape of the foot, so as to obviate unequal pressure. If shoes be worn, they should come sufficiently high on the instep to prevent undue pressure on the toes, and the material of which they are made ought to be soft and pliable; without these precautions other means will be of no avail, at least as far as regards effecting a radical cure, whereas by attention to them alone, Corns frequently disappear entirely, or at all events their progress is arrested.

There are several ways by which Corns may be eradicated, provided, as we have just mentioned, that properly constructed boots and shoes are worn. The following are the best methods with which we are acquainted:—

The *first method* consists in removing the pressure from the Corn, by applying over the toe on which it is situated a piece of doe-skin spread with adhesive plaster, with a hole cut in the centre large enough for the Corn to rest in; the pressure of the shoe is thus removed from it and thrown on the surrounding parts. If this be kept constantly applied and the prominent part of the Corn cut occasionally with a sharp knife or razor, it will gradually disappear.

The *second method* is that of removing the Corn entirely without breaking it; this however can only be practised by an expert chiropodist, who, with an instrument for the purpose, scrapes round the circumference of the Corn, carefully and gradually detaching it, until at length he reaches the extreme point of the root, and in this manner it is completely extracted, without giving the least pain: the cavity is then filled with a little simple ointment, and the part covered with adhesive plaster.

The *third method*, which is very frequently practised, consists in destroying the Corn by means of *lunar caustic*. The hard part of the Corn is first to be cut away as much as possible without causing pain or making it bleed; the foot is then to be kept in warm water during a quarter of an hour or twenty minutes,

and after drying it properly the lunar caustic is to be applied over the surface of the Corn without using it too freely. The part is then to be covered with adhesive plaster, and at the expiration of ten days or a fortnight the dead scarf skin generally comes away with the Corn attached to it; if not, the caustic is to be re-applied. A few hours' rest are necessary after the caustic has been employed, hence the most convenient time to apply it is immediately before going to bed.

Sir Benjamin Brodie is of opinion that concentrated *nitric acid* or strong *aqua-fortis* is the best thing for destroying the soft Corns which are usually seated between the toes: it is to be applied by means of a probe with a bit of lint attached to the end, and employed so as to penetrate into the substance of the Corn without injuring the parts beneath.

The Corns which form on the soles of the feet are exceedingly troublesome and not easily got rid of. Relief, to a certain extent, may be given by taking off the pressure from the Corn, and throwing it on the surrounding parts, by means of the diachylon plaster, employed in the manner recommended for bunyons (see page 99), or by wearing a felt sole in the shoe, with a hole in it corresponding to the Corn.

Mr. Samuel Cooper recommends the following as a "successful composition" for Corns—

No. 124.

Take of purified gum ammoniac, an ounce,
Yellow wax, the same quantity,
Acetate of copper (verdigris), three drachms. Melt the two first ingredients together, and after removing them from the fire, add the verdigris.

The various plasters, ointments, &c., which are daily advertised as infallible cures, are either insignificant, inasmuch as they tend only to soften without eradicating Corns, or they are possessed of acrid and stimulating properties, which sometimes produce severe and dangerous inflammation.

COW-ITCH, OR COWHAGE. (*Dolichos Pruriens.*)

This is a creeping plant, which grows in great abundance in the East and West Indies: it bears pods covered with brownish-

coloured hairs, which, when allowed to touch the skin, occasion the most violent itching. An electuary made, at the time it is to be used, by mixing these hairs with molasses, jelly, or honey, is an excellent remedy for expelling worms. The dose for a child is one or two teaspoonfuls (according to the age), which should be taken before breakfast and followed by an active purge of castor oil after the second or third dose. This remedy no doubt acts mechanically on the worms, and yet when given in large doses, does not produce griping or purging. We have used Cow-itch in the West Indies in some hundreds of cases, and have never known any bad effect result from it, nor have we ever found it to fail in expelling the long round worms (*lumbrici*). This valuable worm medicine is nevertheless very seldom used in this country. It produces no effect on the tape worm (*tænia*), and very little on the small worm of the lower bowel (*ascarides*).

CREAM OF TARTAR.

Cream of Tartar acts as an excellent diuretic in dropsy of the belly, not depending on diseased liver or other visceral obstructions, when taken to the extent of an ounce, dissolved in a pint and a half or two pints of water, in the course of the day. An excellent purgative in common use is Cream of Tartar and jalap, in the following proportions—

No. 125.

Cream of tartar, thirty grains,
Jalap, fifteen grains. Mix.

The solution of Cream of Tartar, known by the name of *imperial drink*, is a useful beverage in feverish affections. (See page 12, No. 7.)

The best laxative for those who are troubled with piles is composed of Cream of Tartar and sulphur, of each a drachm.

CROTON OIL.

This country is supplied with Croton Oil from Madras and Bombay: the plant from which it is produced grows in Ceylon, the Malabar coast, China, and the neighbouring countries. This oil is a powerful purgative in the dose of one or two drops, either

made into a pill, with crumb of bread, or taken in a little castor oil ; and two or three drops rubbed on the tongue act with equal certainty ; hence its value in apoplexy attended with difficulty in swallowing, mania, tetanus, accompanied with locked jaw, and in other diseases, where remedies in more bulky doses could not be easily administered. When apoplexy is threatened, the prompt and powerfully revulsive action of this remedy may be the means of warding off the impending danger ; and it has been often known to give relief in cases of obstinate costiveness and colic when other means had failed. It has been used with advantage to assist the action of other remedies in expelling tape-worm.

Croton Oil rubbed in upon the skin produces an eruption of small pustules, and when used in this manner has been found in some cases preferable to the tartar emetic ointment as a counter-irritant.

No. 126.

Croton oil, two drachms,
Almond oil, an ounce. Mix.

The application of Croton Oil to the neck in croup has been found very beneficial ; and in chronic inflammation of the wind-pipe, attended with loss of voice, cough, and a feeling of tightness at the throat, the following mixture rubbed in during half an hour or longer, twice a day (the throat being afterwards covered with flannel), has been employed with success—

No. 127.

Croton oil, a drachm,
Olive, or almond oil, two drachms. Mix.

Croton Oil is said to be very irregular in its action ; in some cases purging violently, and in others producing little or no effect ; but this arises from its being so frequently adulterated with castor oil and other substances ; indeed, it is seldom to be found pure in the shops.

CROUP.

The disease termed Croup, although it occurs occasionally in the full-grown person, may be considered to belong to children. It consists in a peculiar inflammation of the windpipe, which

gives rise to the production of a whitish membrane, somewhat similar to the lining of an egg-shell. Upon this inflammation, upon the presence of the white membrane in the air passages, and upon the spasmodic action which both are apt to produce, the symptoms of Croup and its dangerous consequences mainly depend.

CAUSES. Croup occurs commonly in young children between the ages of two and six years : it is rarely met with in infants at the breast. The most usual cause of this disease is the action of cold, damp air ; and hence cases of Croup are most numerous on the eastern coast of England and during the prevalence of east or north-east winds. Certain situations are said to promote attacks of Croup, and many writers remark that children who reside in low moist places, near the banks of rivers, lakes, &c., or in deep valleys, are more subject to it than others. In short, any circumstances which lead to the exposure of the upper part of the throat to cold and damp, are apt to excite Croup.

SYMPTOMS. Croup may attack a child suddenly, but it usually commences with all the appearance of common cough (*bronchitis*), and is not easily detected, even by the medical man, in its earliest stage. The child coughs, and has more or less fever, with hot and cold fits, flushed face, watery red eyes, and restlessness at night. The cough, at this time, is occasionally hard and hollow, and the child shows signs of uneasiness about the throat by frequently carrying the hand to this part, and complaining of pain. The voice may also be hoarse ; and when these symptoms exist, no time should be lost in the application of appropriate remedies, for although they may be nothing more than common cough with irritation of the throat, yet they may be the first signs of an attack of Croup, and it is infinitely better to have expended a little care, anxiety, and medicine for nothing, than to allow a disease of the most fatal kind to gain ground and establish itself, from the want of proper attention. The symptoms just enumerated may continue for a few days or weeks without much change ; but sooner or later the character of the cough suddenly alters, and assumes what is called the croupy sound. This change usually takes place in the night, and is so peculiar that when a person has once heard the croupy cough he can never mistake it again. It is a sharp, dry, ringing cough, which is followed by a

hissing inspiration, and is compared to the crowing of a cock or the barking of a young puppy ; the fits of coughing are most frequent during the night, and soon produce a most unfavourable effect on the state of the little patient ; the face is flushed, and often bathed in perspiration ; the eyes watery ; the skin burning hot ; the pulse frequent and hard ; the voice is hoarse ; and the upper part of the windpipe is often tender to the touch. This is the first dangerous change in the character of the complaint, and when it has once taken place, the symptoms commonly proceed from bad to worse. During the early stage, the fits of coughing are not very frequent, and during their intervals the child may obtain a little rest ; but they soon return with renewed severity : the croupy sound, hissing breathing, and suffocation, are now more evidently marked (*confirmed stage*) ; the face is bloated ; the pulse extremely quick, and the skin hot ; each fit of coughing seems to threaten death by suffocating the child ; and when the fit has passed over, he lies in a state of extreme anxiety and restlessness, with the head thrown back and all the muscles of respiration in full action, showing that nature is making violent but vain efforts to convey air in sufficient quantities to the interior of the chest. The fits of coughing are now sometimes followed by vomiting, and very often by the discharge from the windpipe of viscid phlegm or shreds of the white membrane which is formed inside ; in some cases regular moulds of the air passages, resembling pieces of macaroni, are spit up. This gives a temporary relief, but the fits of suffocative coughing soon return and reduce the patient to an extreme degree of weakness (*collapsed stage*). The difficulty of breathing is now permanent, and the little sufferer does not seem to obtain a moment's relief, but lies gasping for breath, with a sunken countenance and cold skin. The pulse is now very quick, small, and weak ; the face bathed in a cold sweat, and pale, with lividity of the lips ; the cough is less frequent, and is evidently failing with the strength of the child ; the voice is almost inaudible ; the patient becomes restless, often makes convulsive efforts as if to free his throat from some obstruction, and either perishes in convulsions, or falls into a state of lethargy, which gradually settles down into death.

Such is the common appearance of real Croup in its most severe

form ; it may last from two to eight days, but when fatal, death usually takes place about the fourth day.

VARIETIES. There are, however, two other forms under which Croup may make its appearance ; these are called the *catarrhal* and *spasmodic* varieties.

Catarrhal Croup is so denominated, because in it the symptoms of common cough (*catarrh*) are more evident than those of Croup. It attacks children soon after the period of weaning, or those who have been spoon-fed, and is much milder than the form which has been just described. The catarrhal Croup commences with symptoms of ordinary cough, which may exist for some time with little fever or general disturbance of the health, when the child is suddenly attacked in the night-time with the hoarse, barking cough of Croup and the hissing inspiration ; the fits, however, are commonly absent during the day ; the respiration in the intervals is comparatively easy ; there is not much fever, and the strength of the little patient is not quickly reduced, as it is in cases of true Croup ; after a few days the fits of coughing become more frequent, but the cough itself is less dry, loses its ringing character, and terminates in the spitting up of a thick viscid phlegm, from which the patient experiences much relief.

Spasmodic Croup occurs chiefly in irritable children who are subject to nervous disorders, and is distinguished by the occurrence of spasmodic symptoms from the beginning of the attack, and the complete absence of disorder during the day. There is little heat of skin, anxiety, or difficult breathing during the intervals between the attacks of coughing, which almost always come on at night. The cough continues to be dry and of a convulsive nature for some time, when a secretion of fluid takes place into the air passages, and the disease terminates by the expectoration of this matter, which is never mixed with any of the white membrane peculiar to true Croup.

This latter is an extremely fatal disease, but the catarrhal and spasmodic varieties are much more under the control of medicine, and consequently less dangerous. A favourable termination, however, may be hoped for, even in cases of true Croup, when the breathing of the child becomes tolerably free, during the intervals between the fits of coughing ; when the pulse is not

very quick ; when the cough becomes loose and less ringing on the discharge of membranous shreds from the air passages ; and when the fits of suffocation begin to subside without any notable diminution of the child's strength. On the contrary, much danger is to be dreaded when the fever is very high from the beginning of the disease ; when the fits of suffocation are violent, frequent, and not relieved by the spitting up of membranous shreds, as before described, or when the inflammation of the windpipe seems to have extended to the smaller air tubes in the chest ; and when the child lies in an exhausted state, such as we have noticed under the term *collapsed stage*, little or no hope can be entertained of its ultimate recovery.

TREATMENT. The rational treatment of all diseases must be governed by our knowledge of their causes, nature, and progress. Thus we have shown that true Croup is commonly excited by exposure to cold, moist winds ; that it depends upon a peculiar inflammation of the windpipe ; that its progress is marked by fits of suffocative coughing, with difficult breathing, and that it terminates in a state of exhaustion and debility, under which the patient usually sinks. Knowing these leading points in the history of the disease, common sense, aided by a very slight share of medical knowledge, will teach us to avoid exposing children to the exciting cause of Croup, and shows that to cure the disease we must combat the inflammation, allay the cough, relieve the breathing, and support the strength. These are what medical men term *indications* of treatment, because the nature of the disease and its symptoms *indicate* to us that such treatment is both rational and proper.

Whenever, then, we have the least reason to dread the invasion of Croup, that is, whenever the voice becomes hoarse, the cough ringing, and the breathing difficult during an attack of common catarrh, or when the croupy symptoms, already noticed, suddenly appear during the night, we must proceed, without delay, to combat the inflammation of the windpipe, which forms the principal feature of the disease. This is done by extracting blood and administering emetics. Unless the child be very strong, plethoric and brought up in the country, it will not be necessary to draw blood from a vein ; but if the fever run high, and the child's constitution admit of it, a few ounces of blood may be extracted

from the jugular vein (see *Blood-letting*), and, in very severe cases, the same quantity may again be taken away in a few hours. In most cases, however, it will be sufficient to apply leeches to the upper part of the chest, over the breast-bone. This part should be selected, because non-professional persons can easily stop the bleeding, when required, by pressure; whereas if the leeches were applied to the throat, it might not be so easy a matter to check the flow of blood when enough had been obtained. As a general rule it may be stated that from an ounce to one ounce and a half of blood may be extracted, for each year of the patient's age.

Immediately after general bleeding or the application of leeches (or before their application, when it may be necessary to bring the leeches from a distance), full vomiting should be excited by *tartar emetic* or *ipecacuanha*. The former can be given more easily to children in the dose of one half a grain to a grain, concealed in milk sweetened with sugar. During the time employed in the administration of these means a tepid bath should be prepared at a temperature of about 90 degrees (Fahrenheit's thermometer), and the child allowed to remain in it a quarter of an hour or twenty minutes. A dose of *calomel* and *James's powder* must then be given, from three to five grains of the former to two or three of the latter, according to the child's age, and this dose may be repeated every third hour, its action on the bowels being aided by castor oil, or any other mild purgative. These are the remedies which should be employed in the early stage of the complaint, but it should be borne in mind that this stage often terminates in ten or twelve hours. In the second stage, when the croupy cough is well marked, and the fits of suffocation severe, local bleeding (if it have not been employed before) may still afford some relief, but should be had recourse to with very great caution, and with a sparing hand. Greater reliance is to be placed in the combined use of calomel and tartar emetic, which have the advantage of combating the inflammatory action without reducing too much the strength of the patient. From two to four grains of calomel for children below two years of age, and from four to eight grains for those above that age, may be given every two, three, or four hours, and if the medicine act too freely on the bowels, its effects may be corrected by the addition of two or three grains of Dover's powder to each dose. While we give the calomel we must also ad-

minister tartar emetic in the way recommended by Dr. Cheyne. Half a grain of tartar emetic, dissolved in a tablespoonful of water, is to be given to a child two or three years old, every quarter of an hour, until sickness and vomiting are produced; and in two hours after the last act of vomiting, the same process is to be recommenced, and so repeated while the strength of the child lasts. It should be observed that, either because the stomach soon gets accustomed to the medicine, or because more is borne in a state of disease than in one of health, it will often be difficult to excite vomiting, and the dose of the emetic may have to be carried to six or eight grains before any effect is produced. Irritation of the skin in the neighbourhood of the inflamed part will also be of use at this time, but it will be better to apply it to the back of the neck than to the front of the throat. Blisters are not advisable; it will be found more convenient to apply a rag steeped in strong liquid ammonia, for a few minutes, to the nape of the neck, or to rub in the tartar emetic ointment, as before described, page 26, until a number of small pustules is produced.

When the above means have been tried without effect, it is probable that the inflammation has given rise to the formation of a whitish membrane in the air tubes, which obstructs the breathing, and helps to excite the suffocative fits which now constitute the chief danger. By carefully examining the matter vomited up, some of these membranous shreds may be discovered: our object now is to promote the expulsion of the membrane, after having given remedies calculated to loosen it from the lining of the air tubes upon which it lies. The following medicines may be employed for this purpose—

No. 128.

Tincture of squills, one drachm,
Sub-borate of soda, fifteen grains,
Infusion of chamomile, one ounce. To be taken every third hour.

No. 129.

Ipecacuanha wine, two to three drachms,
Ammoniated tincture of valerian, fifteen drops,
Infusion of chamomile, one ounce. To be repeated every two or three hours, until vomiting be produced.

Another formula which may be employed with benefit in this stage of the disease is,

No. 130.

Ipecacuanha wine, two drachms,
Oxymel of squills, two ounces,
Sulphate of soda, half a drachm;
Decoction of senega, four ounces. Two or three large spoonfuls to be taken every two hours, until nausea and vomiting are excited.

When these medicines fail to excite vomiting, their action may be aided by irritating the top of the throat with a feather, or some strong snuff may be blown into the nostrils, to occasion sneezing, which may help to dislodge the false membrane from the air tubes.

In the last or confirmed stage of Croup, little chance remains for the patient, and but little can be done by medical treatment for his relief. If no remedies have been employed before, then emetics, combined with antispasmodics, should be administered at once, but not pushed so actively as to cut down the patient's strength. One of the formulae (Nos. 129, 130) may be administered as an emetic, every three hours, and in the intervals the following expectorant remedies—

No. 131.

Oxymel of squills, two ounces,
Sulphate of soda, one drachm,
Ammoniated tincture of valerian, one drachm and a half,
Camphor mixture, six ounces. A wineglassful to be taken every half hour.

No. 132.

Hydro-sulphuret of antimony, eight grains,
Ammoniacum, one scruple,
Oxymel of squills, half a drachm,
Powdered liquorice, enough to form a bolus. One to be taken every two hours.

Or the following, which is much used at the Children's Hospital, Paris—

No. 133.

Tartar emetic, one and a half grains,
Syrup of ipecacuanha, one ounce,
Oxymel of squills, three drachms,
Infusion of polygala, four ounces. A spoonful every two hours.

The tepid bath may be resorted to during this stage, and rendered slightly stimulant by the addition of some sulphuret of potash or carbonate of soda; and when the patient's strength begins to give way, it must be supported by small doses of burnt brandy, wine, or other cordials. When all hope of saving the patient by medical means has been lost, or when emetics and expectorants fail to bring up the membrane which obstructs the air passages, it has been recommended to make an opening in the windpipe, and thus give freer access of air to the lungs. English writers are opposed to this operation, but on the continent of Europe, and in France in particular, many children have been rescued by it from certain death.

The treatment of the catarrhal and spasmodic varieties of Croup may be described in a few words. The former requires the treatment which has just been noticed, with this exception, however, that bleeding and emetics may be used with a much more sparing hand, and that purgatives and blisters are found to be of more use in this variety than in true Croup. In the spasmodic form, blood-letting is seldom required, because inflammatory symptoms do not exist to any extent; the main object which we have in view being to allay the spasmodic cough and difficulty of breathing. For this purpose two or three emetics may be administered in the course of the day, and two tablespoonfuls of the following mixture given every three hours—

No. 134.

Sub-carbonate of ammonia, one scruple,
Sulphate of soda, three drachms,
Infusion of valerian, three ounces.

No. 135.

Powdered valerian, two drachms,
Oxymel of squills, one ounce,
Laudanum, twenty drops,
Water, one ounce.

A child of from two to five years may take a teaspoonful of the latter mixture every hour; if from five to eight years, the same quantity may be given every half hour or forty minutes, but the effects of the laudanum must be carefully watched.

The bowels are to be kept open with calomel and jalap, and a blister placed behind the nape of the neck. In this form of the disease baths are particularly serviceable.

When children have been once attacked by Croup, they are liable to have recurrences of the complaint under exposure to any of its exciting causes. Hence the child's throat should be kept well covered, the influence of cold damp air should be particularly avoided, and whenever any cough or hoarseness of the voice makes its appearance, recourse should be had at once to medical treatment. During the progress of Croup, the child should not be permitted to touch any thing except the mildest fluids, barley water, &c.; but when the collapsed stage sets in, he may take sago, beef tea, egg pudding, or any other light, nutritious matter. In the spasmodic form it will not be necessary to observe so strict a diet as in true Croup.

CUBEBS.

The plant from which this species of pepper is obtained is a native of Java, the Mauritius, the island of Ceylon, and other eastern countries. Cubebs were first used medicinally in Europe in 1816, and are now in very general use in the treatment of gonorrhœa, which yields readily to this pepper when taken in the dose of a drachm (about a dessert spoonful) thrice a day, in a small quantity of water, or in wine and water. (See *Gonorrhœa*.) Cubebs have also been known to give considerable relief in chronic catarrh of the bladder, in doses of ten or twelve grains three times daily. (See page 136.)

CUSPARIA, OR ANGUSTURA BARK.

Cusparia, or Angustura Bark, is one of the best tonics we possess, though it is now very little used in Europe. In tropical climates it is often given in bilious fevers, and is of the greatest utility in counteracting the debility and dropsy which so frequently follow the fevers of warm climates. We have found it a valuable remedy in the treatment of bilious purging, which is so common within the tropics. This is a favourite remedy with the Indians of South America, and the aborigines or Caribs of the West Indies, from whom we derived our knowledge of its virtues.

It was first brought to this country in 1788, from the island of Dominica, where it is still much esteemed by the negroes and few Caribs now left.

The powder of Cusparia is given in doses of from ten grains to half a drachm. The *infusion* is thus prepared—

No. 136.

Take of Cusparia, bruised, five drachms,
Boiling water, a pint. Macerate in a vessel lightly covered, and strain.
Dose, a tablespoonful to four tablespoonfuls.

DANDELION.

This is a very common and well-known plant; the only preparation directed in the pharmacopœia is the *extract of Dandelion*, which is not supposed to possess any active medicinal property. It is sometimes given, on account of the bitter principle which it contains, as a tonic in indigestion, and, from its diuretic virtue, is occasionally administered in dropsical affections, along with more active remedies. This plant is said to have been of great service in jaundice and in chronic inflammation of the liver, and of the lining membrane of the stomach; but its virtues appear to be much overrated by some medical men. The dose of the extract of Dandelion is half a drachm four times a day, in peppermint or cinnamon water.

DEADLY NIGHT-SHADE, OR BELLADONNA.

This plant grows in hedges, thickets, and shady places, and is frequently met with amongst old ruins. In the month of September it bears sweetish-tasted berries, of a purple colour, which are powerfully narcotic, and from their resemblance to cherries, children are sometimes tempted to eat them, and death is not unfrequently the consequence. The symptoms arising from eating the berries are delirium, accompanied with violent laughter and various gestures, as if the individual were grasping at imaginary objects; the eyes are red, and appear as if they protruded from their orbits, and the pupils are dilated and immovable. These symptoms are soon followed, when the case terminates fatally, by loss of voice, difficulty in swallowing, and convulsions.

This poison has the effect of paralysing the stomach, so that emetics are rarely found to act ; it is advisable, however, in the first instance, to give three grains of *tartar emetic*, or twenty-five to thirty grains of *sulphate of zinc (white vitriol)*, or six grains of *sulphate of copper (blue vitriol)*, in a little water ; but the only way which can be trusted to of emptying the stomach is by means of the stomach-pump. The best antidotes are strong coffee and the effusion of cold water on the head and body.

We are indebted to the German physicians for our knowledge of the medicinal virtues of this plant, which, though of great value in the hands of experienced medical men is nevertheless of too dangerous a nature to admit of being used with safety as a popular remedy.

Belladonna was first used in the form of infusion as a fomentation, to soothe the pain of cancerous and other foul sores, and has since been employed internally in a similar manner to hemlock, henbane, and other narcotic remedies, as a palliative in cancer. The extract of Belladonna rubbed over the eyebrows and eyelids, has the peculiar property of dilating the pupils of the eyes ; hence it is generally used for that purpose before the operation for cataract is performed. In cases of blindness arising from opacity of the centre of the lens, a little of the infusion of the leaves of Belladonna dropped into the eyes three or four times a day, by dilating the pupils, allows the sight to be restored for a time ; and it has been stated that this practice may be continued for years. Professor Beer, the celebrated oculist of Vienna, recommends half a drachm of the extract, with an equal proportion of mercurial ointment, to be rubbed in upon the temple every night at bed-time in cases where there is deep-seated pain of the eye-ball ; and the extract alone applied in the form of plaster often gives relief in cases of tic-douloureux and rheumatic pains. The Belladonna plaster of the pharmacopœia applied under the loins, is often of great service in allaying the pain attending difficult menstruation. An ointment composed of a drachm of the extract of Belladonna mixed with seven drachms of lard, is an excellent remedy in piles, and when rubbed on the perineum, gives relief in chordee. Belladonna has been used of late years as a remedy in hooping cough. Professor A. T. Thomson says, " I have ordered the extract in doses of one-eighth of

a grain to a child eight years of age, and gradually increased the dose to a quarter of a grain. Its power over the cough is extraordinary. It produces a state of the skin closely resembling scarlatina, accompanied with fever, suffused eye, dimness of sight, and frequently, though not always, head-ache. Whilst these symptoms continue, the cough remains absent, but it returns as soon as they disappear. By keeping the habit for a sufficient time under the influence of the remedy, the period of the disease has always been greatly shortened." Hahneman, Hufeland, and other German physicians, recommend Belladonna to be given in the following manner as a preventive of scarlet fever—

No. 137.

Extract of Belladonna, three grains,

Cinnamon water, an ounce. Mix. Three drops of this solution are to be given twice a day to a child a year old, adding one drop for every year, until twelve be taken for a dose.

This prophylactic has its advocates in England, but it has been known to fail in several cases in which it has been tried where scarlatina was raging as an epidemic: the smallness of the dose, however, renders it perfectly harmless.

In administering Belladonna, the precaution must be attended to, of commencing with small doses; half a grain of the extract, or a grain of the powder of the dried leaves gradually increased to three or four grains, or until slight giddiness, dimness of sight, and a sensation of dryness and heat of the mouth and throat are felt.

DELIRIUM TREMENS.

This disorder arises from excess in drinking spirituous liquors, or from the abuse of opium; rarely from other causes. It comes on generally after a debauch, or in drunkards, in consequence of giving up their accustomed stimulus too suddenly. In some cases delirium is the first symptom observed: but in general there are certain premonitory signs, indicative of its approach. The patient is restless, peevish, and cannot sleep sound; his manner becomes hurried and abrupt; and he appears low-spirited. After remaining some time, perhaps two or three days or a week in this state, his ideas become confused, he bustles about as if he had more

business to do than he could manage, he is exceedingly restless, and there is an appearance of wildness in his countenance. The characteristic symptoms of the disease then begin to declare themselves ; the hands, and sometimes the whole body, are in a constant state of tremor, the tongue is also tremulous, and there is a twitching motion of the tendons at the wrists : if the patient sleep it is only for a short time ; he awakes suddenly, alarmed by some frightful dream. At length the mind becomes affected, he fancies that there is some mischief plotting against him, or that his affairs are going wrong, and is constantly talking about them. When the delirium is fully established he cannot sleep, and attempts frequently to get out of bed : if he escape from his apartment there is no difficulty in leading him back to bed, if he be spoken to quietly ; but if thwarted he becomes exceedingly suspicious, accuses those near him of having some mischievous design against him, and struggles to get away. The hallucinations attending this disease are always of a desponding character ; the patient fancies that he is attacked by robbers, and struggles as if he were defending himself, or he supposes that a swarm of bees are hovering round him, and he moves his arms as if he were driving them away. The illusions are sometimes of a very absurd and whimsical description ; for example, we had a patient under our charge, who supposed that he had rings on his fingers which could not be removed, and was constantly making efforts as if he were endeavouring with all his strength to pull them off. It does not often happen that the patient is violent or outrageous ; but cases do occasionally occur in which it is necessary to make use of a strait-jacket. One case came under our observation in which the patient, a tall powerful individual, a planter, from the neighbourhood of New Orleans, aimed a violent blow at the head of his medical attendant, who he supposed had been giving him poison. In this case we were under the necessity of ordering the patient's hands to be confined. The pulse is at first slow and soft, but as the disease advances, it becomes quick, feeble, and perhaps fluttering : the face is not flushed, nor are the eyes red ; the tongue is foul, but not dry ; there is little or no appetite, and the skin is covered with cold clammy perspiration, which in some cases has a peculiarly disagreeable smell.

It is of the utmost importance that Delirium Tremens should

not be mistaken for inflammation of the brain, inasmuch as the treatment required for the latter would produce the worst effects in the former disease, which is to be distinguished from other affections of the brain by the absence of pain, the trembling of the hands and tongue, the starting of the tendons at the wrists, the peculiar character of the delirium, and the knowledge of the previous habits of the patient. On the other hand, a patient with inflammation of the brain has a strong full pulse, hot skin, flushed face, red eyes, dry and red tongue; he suffers from a distressing intolerance of light and sound; and the delirium is generally furious.

The length of time required by Delirium Tremens to run its course is very uncertain, but it generally terminates within a week, and is not a dangerous disease when judiciously treated.

TREATMENT. Several theories have been formed relative to the nature of this affection, but there is only one opinion entertained by those who have had frequent opportunities of observing it, with regard to the treatment which ought to be adopted. The principal indication is to procure sleep, and for this purpose *opium* has been found the most suitable remedy; indeed, it may be said to be the only medicine required in the treatment of the disease. Some practitioners give the opium in small and frequently repeated doses, others in much larger doses at longer intervals; if the case be mild, and the treatment commence early, a smaller quantity will be required than in cases where there is much irritability, and the disease has continued some time; in the former case, from fifteen to twenty drops of *laudanum*, or a grain of opium, may be given every four hours, and in the latter, three grains of opium, or from fifty to sixty drops of laudanum, should be given regularly every six hours, until sound sleep be procured. If it happen that the patient after sleeping a short time awakes suddenly in a state of great alarm, the dose of laudanum or opium should be immediately repeated, for the patient cannot be considered out of danger until he has slept soundly during several hours. We have known patients to sleep from twelve to fifteen hours, and then awake almost well; but in general after sleeping during a longer or shorter period, the tremulous motion of the hands and tongue may still be observed, and the patient complains of being weak; it is therefore advisable

to continue the opium in smaller doses during at least twenty-four hours longer. If the bowels be constipated, which is seldom the case, two or three drachms of the tincture of rhubarb or of senna, or two or three teaspoonfuls of Gregory's mixture, may be given. (See page 48, No. 36.) But active purging is not indicated, and would be improper. This is a disease of debility, and there is therefore no necessity for starving the patient, but in general there is very little appetite. If he request to be allowed to drink brandy or gin and water, or whatever stimulus he has been in the habit of taking, it is better to give him a moderate quantity occasionally, than to let him fret and be annoyed in consequence of refusing this indulgence. Patients have been known to become quite outrageous from not being allowed to drink spirits, and after being indulged with a glass of brandy and water, preceded by a dose of opium, have fallen fast asleep, perfectly satisfied; and after sleeping eight or ten hours, have got up quite free from delirium; but there is no necessity for indulging the patient with spirits or wine, unless under the circumstances we have just mentioned. Opium alone is quite sufficient to effect a cure.

It occasionally happens that stout plethoric individuals, when attacked with Delirium Tremens for the first time, have a quick full pulse, hot skin, flushed face, and other feverish symptoms; in such cases, besides giving opium in the manner already directed, we must administer tartar emetic as follows—

No. 138.

Tartar emetic, three grains,
Compound tincture of lavender, half an ounce,
Water, a pint. Mix.

Two or three tablespoonfuls of this mixture are to be given every hour or oftener, in order to keep up a slight degree of nausea. Blood-letting should not be had recourse to in this disease under any circumstances, not even when it is associated with inflammation of the lungs or any other organ. In the event of such a complication, which does not often take place, the lowering action of the tartar emetic will have the effect of moderating the inflammation, so as to allow it to be conducted to a safe termination. The last case of this disease that came under our notice proved fatal in consequence of blood-letting. The

patient, a stout young man, lived at an obscure village, a considerable distance from the residence of the nearest medical man ; his friends, finding him delirious and incapable of sleeping, became alarmed, and sent during the night for the village blacksmith, who, supposing that he had "brain fever," bled him until he fainted. The medical man who attended the following morning, found him in a state of exhaustion, from which he could not be roused by the most powerful stimulants ; and when we saw him he had low muttering delirium, convulsive movements of the limbs, and other bad symptoms, indicating the near approach of death. The brain and its membranes were carefully examined, but not the slightest trace of inflammation could be detected.

Soldiers and sailors are often attacked by this disease in warm climates, where we have met with several cases in which it was accompanied by diarrhoea or looseness of the bowels, a complication which is soon followed by great debility. The treatment here consists in giving chalk-mixture, with laudanum, the latter remedy being always looked upon as our sheet-anchor.

DIABETES.

This disease usually commences slowly and the general health often suffers materially before the nature of the disorder is discovered. The first symptoms experienced are indigestion, general debility, constipation of the bowels, thirst, and irregular, capricious, and sometimes voracious appetite. At length the patient accidentally notices that his urine is considerably augmented in quantity, and from the time that this observation has been made, he finds that the quantity discharged gradually increases. As the disease proceeds, the symptoms already mentioned become more severe ; the skin feels harsh and dry ; there is a sensation of heat and weight at the stomach ; alternate chills and flushes of heat are experienced, and the patient is very low-spirited. All the symptoms go on steadily increasing in severity ; the urgent thirst and frequent desire to empty the bladder become very distressing, particularly during the night ; there is a dull aching sensation across the loins, slight giddiness, and occasional head-ache ; cough, and shortness of breathing, and entire loss of sexual desire. As the disease advances towards a

fatal termination, the gums become red, swollen, and bleed from the slightest pressure, the taste is depraved, the tongue is foul, with red edges; the strength is much diminished, and the body emaciated; the appetite, which was previously voracious, gives way, the legs become dropsical, and the pulse is quick and weak.

The urine is of a pale straw colour, sometimes insipid, but in the great majority of cases it has a sweetish taste and faint smell, somewhat resembling that of violets, and contains a considerable quantity of sugar. The quantity of urine voided varies from eight to twenty pints daily, and there are well-authenticated cases on record, in which the average discharge was from forty to fifty pints a day. The weight of the urine when the disease is confirmed invariably exceeds that of the liquids drunk, and is in some cases greater than both the food and drink consumed, even when the hunger and thirst are extreme. The quantity of sugar contained in the urine is much greater in some cases than in others, and it varies in the urine of the same individual at different times; an ounce of sugar has been extracted, in several cases, from each pound of urine.

The nature of Diabetes is so little understood, that medical men have not yet been able to decide with regard to the part of the body in which it is seated; some suppose that the kidneys are the primary seat of the disease, others that it depends on the state of the stomach or of the skin; and it has been imputed to a diseased state of the blood. Various causes have been assigned for this disease, such as exposure to cold when the body is in a state of perspiration, abuse of spirituous liquors, long-continued bodily and mental exertions, excess in venery, grief, and, in a word, whatever depresses the vital powers; but if these or other exhausting causes could of themselves bring on this disorder, it would certainly be of more frequent occurrence: there can be no doubt however that they act as exciting causes, when there is a disposition to the disease in the system. Diabetes has frequently made its appearance without any known exciting cause, and the cases brought forward by Rollo, Prout, Gregory, and others, prove beyond a doubt that it is an hereditary disease. We have at present a female patient, twenty-seven years of age, who has laboured nearly five years under this disease, which commenced shortly after the birth of her first child; the infant was

also attacked by the same disorder when three months old, and died from it at the age of twelve months.

Diabetes runs its course in some cases in a month or two, and continues in others during several years: it is generally complicated with pulmonary consumption or chronic bronchitis, and is so frequently fatal, that many medical men, though they admit that it may be much relieved, or even suspended for a time, are nevertheless of opinion that a radical cure cannot be effected.

TREATMENT. Diabetes sometimes commences with a dull pain at the loins, and occasional pain and heat at the stomach, attended with a quick and rather full pulse, hot and dry skin, and other well-marked feverish symptoms; in such cases general blood-letting and cupping over the seat of the pain have produced the very best effects; but in general the disease comes on in a very insidious manner, and the period at which the abstraction of blood could be of service is past before the nature of the disorder is ascertained.

There is nothing of more importance in the treatment of Diabetes than a properly regulated *diet*, and there is no other disease in which this is less under the control of the medical attendant, or of the friends of the patient; for the latter, constantly urged by the most insatiable appetite, seeks every opportunity of gratifying it, in spite of the repeated remonstrances of his friends. The diet should be liberal in quantity, and confined as much as possible to animal food, which has an astonishing effect in mitigating the disease; but unfortunately few patients have sufficient self-control to allow them to continue this diet alone: the craving for bread or other vegetable substances, and the disgust to animal food, becomes at last so great, that it is questionable whether or not any patient has ever been known to confine himself long to its exclusive use; in some cases it has been known to induce sickness at stomach and purging. The diet should consist of three meals of animal food, with a small proportion of bread or some other vegetable substance, in the course of twenty-four hours, and the quantity should be suited to the power of the digestive organs. The best kinds of animal food are plain roast or boiled beef and mutton, beef steaks and mutton chops. Some authors recommend fat pork, smoked beef, salt herrings, dried cod-fish, &c.; but in this disease, though the

appetite is great, yet the stomach is weak and irritable, and not prepared for the reception of food which would be found difficult of digestion, even by the strongest stomachs. The most suitable drinks are water which has been boiled, lime water, and the Bristol and Bath waters taken in moderate quantities ; for unless the patient have resolution to curb the inordinate desire to eat and drink, which always attends this disease, he need not expect to derive much benefit from the use of medicine.

Various remedies have been repeatedly tried, but it appears doubtful whether or not any of them have ever had the effect of doing more than palliate or suspend the disease for a time, unless in cases where the strictest attention to regimen and diet has been steadily persevered in, not only during the existence of the disorder, but long after all its symptoms had entirely disappeared. *Opium* and the *preparations of iron* are the remedies which are at present principally relied upon ; of the former, the dose at first should be a grain (or a quarter of a grain of the acetate of morphine) at bed-time, and the quantity gradually increased to six grains or more (or to two grains of morphine), in the course of twenty-four hours ; and of the latter the dose should be ten drops of *tincture of steel*, or ten grains of *subcarbonate or rust of iron*, three times a day. We have found *tartar emetic* of great service, when given in small doses frequently repeated : one or two grains or more, according to the quantity which the stomach will bear, dissolved in the usual drink of the patient, and taken in the course of twenty-four hours, have the effect of determining to the skin, and of relieving to a considerable extent the constant desire to eat and drink, which is so distressing to the patient. Two or three pills, composed of equal parts of rhubarb and aloes, should be taken as often as they may be found necessary, in order to counteract the strong tendency to constipation, which always exists in this disease. But of all the numerous plans of treatment hitherto proposed, we believe that none will be found so successful as that of removing to a warm climate ; and we are convinced that the constant action of the warm atmosphere of intertropical countries, by restoring the natural secretion from the skin, will be found to possess a greater influence over this affection than any other remedial means whatever. Richter, Marsh, Clarke, and other writers on this disease, have stated

their opinion, that no good can be done until the healthy function of the skin is restored, and for that purpose they recommend sudorific medicines and the warm bath; but in this variable climate little confidence can be placed in any means resorted to with the intention of keeping up a constant action on the skin; and moreover, the sudorific plan of treatment during winter, unless conducted with precautions which few patients can command, has appeared to us to have been in some cases rather injurious than otherwise. It has been invariably remarked that, whenever the disease begins to give way, the first symptom of amendment is a change in the state of the skin, which, from being rough, parched, and sometimes scaly, becomes soft and moist; and the diminution of the quantity of urine always keeps pace with the progress of the skin towards a healthy state. It has likewise been observed, that diabetic patients suffer most severely during winter, and that the disease is more common in the variable climate of England and Holland than in other countries; while, among the dark-skinned races of men, who inhabit warm climates, the complaint is scarcely if at all known, and is exceedingly rare even among Europeans residing in warm countries. But to advance any theoretical opinion, or to speculate on the advantage which might accrue from change of climate, would be quite uncalled for in a work of this description. We base the advice which we now offer on the fact that, since 1829, out of six of our own patients with confirmed Diabetes, five have recovered from residing in countries within the tropics. Three of these cases were complicated with chronic bronchitis, and the one which terminated fatally, with pulmonary consumption, which was in fact the cause of death; the discharge of saccharine urine having diminished considerably during some months prior to the decease of the unfortunate patient, who, not knowing the state of his lungs, flattered himself that he was rapidly recovering. One of these patients recovered at Rio Janeiro, another at the Mauritius; one died at Madeira, and the other three recovered in the West Indies. We do not mean to assert that living in a warm climate will alone effect a cure, since all these patients wore flannel next the skin, took opium in large, and tartar emetic in small, doses; used the tepid bath, followed by frictions with rough towels over the whole body, and lived

principally on animal food. One of them, a gentleman of strong mind, and possessed of great self-denial, lived almost entirely on animal food, and he recovered in a shorter time than any of the others.

The West India islands which we believe to be the best suited for diabetic patients, are Barbadoes, Antigua, St. Kitts, and Montserrat; but there are many dry and salubrious situations in all these islands, and now that steam communication is about to be established between them and this country, they will be rendered easy of access. It is calculated that the time required for the passage will not exceed a fortnight or sixteen days.

Diabetic patients, among the lower classes, cannot command the necessary diet, nor are they able to follow the regimen required; the consequence is, that after lingering some time, they nearly all perish, and in this country, even under the best conducted treatment among the higher orders, it is supposed that not more than one out of nine or ten entirely recover.

DIARRHŒA.

FLUX, LOOSENESS OF THE BOWELS, PURGING. This is a common and well-known disorder, characterised by more frequent and thinner evacuations from the bowels than natural, accompanied or not with griping pains in the belly, and occurring generally without fever. Diarrhoea is frequently a prelude to dysentery, and both these disorders are caused by a morbid state of the mucous or lining membrane of the bowels; in the former there is simply irritation or relaxation of the mucous membrane, in the latter there is inflammation, attended with constant pain and fever.

Diarrhoea arises, in the majority of cases, from errors in diet, and may take place from eating too much, from unwholesome food, or from a peculiarity of the patient's constitution, which allows him to be acted on by certain articles of diet which would produce no unpleasant effect on other people. Other not unfrequent causes are checked perspiration from exposure to cold, sitting with wet feet, drinking cold water, cyder, beer, or other cold beverages, and taking ices when the body is overheated at the time; suppression of the menstrual or other evacuations, and

increased or depraved secretion of bile. In some constitutions this affection comes on from sudden fright, surprise, anger, or any other strong mental emotion; and is also common in fever and measles, and generally accompanies the last stage of pulmonary consumption. Diarrhoea is frequently induced in warm climates by *malaria*, and is in all countries occasionally epidemic from causes the nature of which we know little or nothing.

Diarrhoea, from whatever cause it may proceed, is commonly announced by flatulency, slight distension and griping of the bowels, and sickness at stomach. In some cases the belly is considerably swollen, hot, and painful. The patient feels relieved after each evacuation, which is voided without the slightest straining. The stools vary from six or eight to twenty or more in number in the course of twenty-four hours, and are at first copious and appear as if a dose of salts had been taken, but afterwards scanty and watery, in some cases mixed with bile, and in others with mucus.

TREATMENT. The first thing to be taken into consideration in directing the treatment of Diarrhoea, is the cause which has produced or may still keep it up.

When Diarrhoea arises from over-eating, from irritating or unwholesome food, or from constipation of the bowels, it is then an effort of nature to expel the offending matter, and ought not therefore to be checked abruptly by astringent remedies, which, though of great service when judiciously used, are often given indiscriminately in all cases of this disorder, which they frequently aggravate, or bring on other diseases of a more serious character. In many cases the efforts of nature are sufficient to restore the bowels to a healthy state, and in general there is very little occasion for the interference of art. In most cases a mild dose of castor oil, or the following mixture, is all that is necessary—

No. 139.

Rhubarb in powder, fifteen grains,
Henry's magnesia, a scruple,
Cinnamon water, an ounce and a half,
Compound tincture of lavender, half a drachm. Mix.

When purging proceeds from obstructed perspiration in consequence of exposure to cold, warm clothing, swathing the belly

with flannel, the warm bath, or the hip bath, and sudorific remedies, should be had recourse to.

No. 140.

Dover's powder, fifteen grains,
James's powder, three grains. Mix. To be taken in a little jelly at bed-time.

No. 141.

Gum arabic, in powder, half an ounce to an ounce,
Warm water, a quart,
Purified nitre, thirty grains. Mix. To be drank in the course of the day.

If the Diarrhoea continue obstinate, and no inflammatory symptoms be present, the following mixture may be taken—

No. 142.

Chalk mixture, six ounces,
Aromatic confection, a drachm,
Tincture of cinnamon, two drachms,
Laudanum, forty drops. Mix. Two tablespoonfuls to be taken after every liquid stool.

If the above mixture fail in checking the purging, an astringent mixture should be taken, which seldom fails in arresting its progress.

No. 143.

Tincture of catechu, half an ounce to an ounce,
Aromatic confection, a drachm,
Chalk mixture, six ounces,
Laudanum, forty drops,
Syrup of ginger, half an ounce. Mix. One or two tablespoonfuls to be taken after each loose stool.

When the evacuations present a bright yellow or greenish appearance, in consequence of an increased or depraved secretion of bile, a gentle laxative should be taken, which may be sufficient to carry it off; but not unfrequently a slight degree of tenderness or pain is felt on pressing with the hand under the ribs of the right side, indicating irritation or inflammation of the liver. In this case ten or twelve leeches are to be applied over the liver, and followed by warm fomentations. The diet should consist of a little rice and milk; and thirty grains of nitre are to be taken in the course of the day in linseed tea or barley water, of which

the patient may drink freely. If the irritation of the liver continue, the local bleeding by cupping or leeches should be had recourse to daily, until it be subdued, and then, if the looseness still persist, the following powders may be taken—

No. 144.

Dover's powder,

Compound chalk powder,

Mercury with chalk, of each a scruple. Mix, and divide into six powders, four of which are to be taken daily in a little jelly.

In this form of Diarrhoea, which is very common in warm climates, and which, if not carefully attended to, often becomes chronic, or terminates in dysentery, we have found the infusion of calumba (see page 109, No. 81) of great service after the irritation or inflammation of the liver had been considerably relieved by bleeding and low diet.

In epidemic Diarrhoea the evacuations generally contain a large quantity of mucus, and sometimes consist of a thin watery fluid, with only a small proportion of feculent matter. The treatment here consists in low diet, such as a little sago, arrow-root, jelly, or chicken broth; in employing the warm hip bath, and in taking a powder, as follows, every three hours; and the patient should have his belly swathed with flannel—

No. 145.

Rhubarb, three grains,

Dover's powder, the same quantity. Mix.

If there be griping, the following injection will be of service—

No. 146.

Thin starch, new milk, or linseed tea, three ounces,

Laudanum, fifteen drops. Mix.

The principal object to be held in view in treating all the forms of Diarrhoea, is to use mild measures at first; in fact, to interfere as little as possible with the efforts of nature, and to watch the patient carefully, so as to be able, in the event of inflammatory symptoms supervening, to adopt, without loss of time, the necessary means for the purpose of preventing the inflammatory action from becoming fully developed. If the

belly becomes painful or tender on pressure, attended with restlessness, thirst, heat of skin, quick pulse, or griping pains on going to stool, there is every reason to suppose that the simple state of irritation of the lining membrane of the bowels is past, and that inflammation has commenced. In such cases the treatment must be prompt and decided, fifteen or twenty leeches are to be applied over the belly, and followed by warm fomentations; and it may be necessary to repeat the depletion at longer or shorter intervals, according to the urgency of the case, until the inflammation be overcome. The diet here is of the utmost importance; a little rice, arrow-root, or some other mild farinaceous substance, is all that should be taken.

When Diarrhoea becomes chronic, it is often very difficult to subdue, since the remedies which are successful in one case are of no use in another; and, indeed, it is often necessary to try several of them before any good can be done. Various remedies are recommended in this stage of the affection, one of the best of which is, the acetate or sugar of lead, in conjunction with opium, as follows—

No. 147.

Acetate or sugar of lead, twenty-four grains,
Opium, six grains,

Mucilage, a sufficient quantity to form twenty-four pills. One to be taken as a dose, three times a day.

In prolonged cases, when the purging is kept up in consequence of relaxation of the lining membrane of the bowels, a wineglassful of the *decoction of logwood*, taken three times daily, and continued regularly during a week or a fortnight often effects a cure when other remedies have failed. Kino is also a useful medicine in chronic Diarrhoea; the dose is ten grains three times a day, in a little cinnamon water. While the patient is taking these or other astringent remedies, he should make frequent use of the warm hip bath, or general warm bathing, wear flannel next the skin, and take five or six grains of Dover's powder, or ten grains of nitre in some warm drink every night at bed-time.

Diarrhoea, whether recent or long-continued, should never be stopped suddenly; if this caution be not kept in recollection, and

strong astringent remedies taken, the result may be, that inflammation may take place in the lungs or brain, or dropsy of the belly supervene, and the consequence may be of the most serious nature. While in the West Indies, in 1830, we had a patient under treatment for chronic Diarrhœa, who not finding himself recovering so rapidly as he expected, ate at bed-time a considerable quantity of the fresh rind of the *pomegranate*, which is powerfully astringent : the Diarrhœa was completely stopped before morning, but the consequence was that inflammation of the brain came on, attended with delirium, to such an extent, that it was found necessary to confine him to bed, and his life was in danger during several days.

There is nothing of more importance in the treatment of Diarrhœa, than a properly regulated diet, which should be of a mild nature, and sparing in quantity. At first arrow-root, sago, a little ground rice pudding, and other light farinaceous substances, are the most suitable ; and after some days, when the irritation is considerably abated, boiled rice, with milk, tender chicken, and chicken-broth, may be allowed. In long-continued cases, when there is considerable debility, and the looseness is owing to a want of tone, or to relaxation of the mucous membrane of the bowels, and where astringent remedies are indicated, food of a more nutritious quality should be taken in moderate quantities, and a glass or two of dry sherry, or of old Madeira, may be taken with advantage.

In some chronic cases, a rigid diet, the occasional application of blisters over the belly, and the employing of half a dozen leeches round the anus every four or five days, have restored the patients to health after various astringent remedies and other means have been tried without producing any good effect.

Those who are subject to Diarrhœa ought to be careful with regard to diet, which should consist of food easy of digestion ; they should avoid eating undressed or indigestible vegetables, such as cucumbers, mushrooms, melons, salads, acid or too ripe fruits, particularly plums ; also fat pork, high game, or any kind of animal food approaching to a state of putrescence, pastry, and various other articles of diet which are known to be injurious to persons with weak or irritable bowels ; and in autumn, the season in which Diarrhœa is most common, they should wear flannel

next the skin, and guard against sudden exposure to cold or other causes which might obstruct perspiration.

DIARRHœA, OR LOOSENESS OF THE BOWELS IN INFANTS.
This is one of the most common complaints of infants, and is sometimes accompanied with griping, which may be known by the child crying and drawing up the thighs towards the belly. It is seldom attended with danger, and is in many cases salutary; but when severe or too long continued, it should be checked gradually, and not abruptly, under any circumstances.

In treating this disorder, we are guided in a great measure by the appearance and number of the evacuations. A healthy child at the breast has generally four or five stools in the course of twenty-four hours; the number however is considerably above this in many children, and under it in others, without being in the least injurious to their health.

In simple purging of infants, arising from acidity in the stomach and bowels, the evacuations are thin and watery, and sometimes frothy or mixed with a little slimy mucus, and have a sour smell. In this case the following mixture should be given—

No. 148.

Henry's magnesia, a drachm,
Mixture of gum arabic, half an ounce,
White sugar, a drachm,
Laudanum, five drops,
Cinnamon water, diluted, an ounce and a half,
Oil of anise, three or four drops. Mix.

Of this three teaspoonfuls are to be given in the course of twenty-four hours to an infant three months old, and then a drachm of *prepared chalk* is to be substituted for the magnesia, and the mixture given as before until the purging abate. While the child is under treatment, the nurse must not take purgative medicine, and she should be careful with regard to her diet, which ought not to consist of crude vegetables or food difficult of digestion.

Purging is often caused by giving infants food of improper quality, or in too great quantity, or it may arise from the mother's milk being disordered from errors in diet, or from mental excitement. If the evacuations in consequence of these

or other causes are watery, and of a yellow, brown, or greenish colour, there is generally in such cases an excess or a depraved secretion of bile. The treatment here consists in using the warm bath and a mercurial preparation at bed-time. The following powder may be given to a child three months old—

No. 149.

Mercury, with chalk, one grain,

Dover's powder, half a grain,

Aromatic powder, three grains. Mix. To be given in a little jelly.

This powder is to be repeated every night, and during the day two or three teaspoonfuls of chalk mixture may be given. If the above treatment do not produce the desired effect, and the infant become feverish, restless, and emaciated, and the stools are suddenly expelled from the bowels with considerable force, it will then be necessary to discontinue the chalk mixture, and to give a powder as above every five hours, the warm bath being used regularly night and morning. If the belly become hot and painful, one or two leeches should be applied over the painful spot, and then warm fomentations. Some practitioners prefer giving half a grain of calomel in place of the grain of mercury with chalk; but either plan of administering mercury may be adopted with the greatest advantage.

Looseness of the bowels not unfrequently comes on in consequence of too early weaning, nature not being prepared for the premature change from the mother's milk to common food; and it also arises from weaning too abruptly; in this case it is obviously caused by depriving the infant of its natural aliment all at once, and substituting for it another, not only difficult to regulate, but for which the delicate digestive organs of the child have not been prepared. In the former instance the infant should be allowed to return to the breast, and in the latter the mother's milk ought to be partially allowed, and the diet otherwise strictly attended to. To assist the bowels in regaining a healthy state, the following mixture may be given—

No. 150.

Aromatic confection, a drachm,

Syrup of white poppies, a drachm,

Cinnamon water and common water, of each an ounce. Mix. A teaspoonful to be given three or four times a day.

When children suffer much from teething, they are almost sure to be affected with watery purging, which if not prolonged until the infant become emaciated, nor attended with pain, should not be stopped; but when very severe, means should be resorted to in order to keep it within due bounds; but they must be adopted with great caution, because if it be suppressed abruptly, irritation of the brain and convulsions may be the consequence, or water may form in the head and cause death.

If the infant become considerably emaciated, lose its appetite, and appear dull, while the belly remains soft and cool to the touch, it will then be advisable to administer an astringent mixture to moderate the purging.

No. 151.

Chalk mixture, two ounces,
Cinnamon water, one ounce,
Tincture of catechu, a drachm,
Laudanum, twelve drops. Mix. Two or three teaspoonfuls of this mixture to be given in the course of the day.

Six or seven grains of the following laxative powder, or a little manna dissolved in warm water, may be given every other day—

No. 152.

Henry's magnesia, two drachms and a half,
Rhubarb, in powder, half a drachm,
Ginger, in powder, six grains. Mix.

The little patient should be carefully watched, and if feverish symptoms ensue, and the belly become distended, hot, and painful, and the stools from being like turbid water become yellow or green, or mixed with mucus, and tinged with blood, leeches, warm bathing, and the mercurial powders, in the manner above directed, must be resorted to.

DIURETICS.

Diuretics are those medicines which increase the urinary discharge, the principal of which are nitre, cream of tartar, sweet spirits of nitre, squills, and foxglove. These remedies are chiefly used in the cure of dropsy, and the following rules, given by Dr. A. T. Thomson, ought always to be strictly observed during their administration.

- " 1. The surface of the body must be kept cool.
2. The use of diluents is essential, and ought always to be urged, more especially when the saline Diuretics are employed.
3. The patient should, if possible, be out of bed during their operation.
4. The Diuretic should be administered in the day-time.
5. After the accumulated fluid has been removed from the serous cavities, and the use of the Diuretics suspended or discontinued, tonics should be prescribed.
6. Little advantage can be anticipated from the employment of Diuretics in those dropsies which originate from organic affections of the liver or the abdominal viscera, and still less in encysted dropsy. It is only in those cases connected with debility and deranged action of the smaller system of vessels, that Diuretics can be regarded as certain remedial agents."

DOVER'S POWDER.

Dover's Powder is composed of one grain of opium, one grain of ipecacuan, and eight grains of the sulphate of potash. This celebrated powder was discovered by Dr. Dover, a physician of considerable reputation in the reign of George II., and was long in general use before it received a place in the pharmacopœia. It is more to be depended upon as a sudorific than any other remedy of the same class, and is much used in rheumatism, general dropsy, catarrh, dysentery, and indeed whenever it is necessary to bring on profuse perspiration. Opium alone, in inflammatory diseases, would do mischief; whereas, when given in this combination, in cases where sweating is indicated, it often produces the very best effects. The patient should remain in bed while under the influence of this remedy, and as soon as perspiration begins to break out, he ought to drink freely of barley-water, toast and water flavoured with lemon-peel, or any other mild beverage, not acidulated, in order to keep up the discharge from the skin. The dose is ten grains, and five grains more may be given at the expiration of an hour if necessary.

DROPSY.

The terminations of the arteries, and the origin or commencing branches of the veins, called *capillaries* from their hair-like

minuteness, are ramified throughout the whole body in myriads of tubular branches, so small as to be invisible to the naked eye. One of the offices of these capillary vessels is to pour out constantly a watery fluid upon every surface and into all the cavities of the body—into the great cavities of the belly and chest, as well as into the most minute cells and interstices. The fluid is secreted in order to moisten the parts, and thereby facilitate motion and prevent injury from friction. While these exhalent vessels are thus employed in giving out fluid, another set of vessels, called *absorbents*, are continually engaged in taking it up and carrying it back to the general circulation; and while the body is in a state of health, the balance between them is equal, but when their healthy functions are impaired, either from the absorbents being deficient in action, or from the *exhalents* acting too powerfully, an accumulation of fluid takes place either in the general cellular membrane, or in the natural cavities of the body, constituting the disease denominated Dropsy. Various names are given to this disorder, according to the parts in which the fluid is deposited;—if in the general cellular substance, it is called *anasarca*; in the belly, *ascites*; in the chest, *hydrothorax*; in the head, *hydrocephalus*; and in the testicle, *hydrocele*.

Dropsy is either active or passive. *Active, or acute Dropsy* may be general, in consequence of increased action of the heart induced by various causes, such as exposure to a cold, moist atmosphere, particularly when the body is in a state of perspiration from active exercise or long exposure to heat, suppression of the menses or other customary evacuations, sudden disappearance or repression of eruptive diseases, abuse of spirituous liquors, &c.; or it may be local, arising from irritation or inflammation of the parts where the fluid is deposited,—for example, Dropsy of the belly or chest may take place in consequence of increased action in the vessels of the serous membrane which lines these cavities.

Passive Dropsy arises in general from causes which impede the circulation of blood in the veins, such as various tumours pressing on the great blood-vessels, ossification of the valves of the heart, &c. The blood being, from these or similar causes, retarded in its course, the vessels become distended, and at length relieve themselves by pouring out the watery part of the blood. This form of Dropsy sometimes comes on from directly debilitating

causes, such as repeated blood-letting, or excessive loss of blood from other causes; inordinate discharges of every description; poor or relaxing diet; drinking immoderate quantities of watery fluids; living in low, damp situations; long-continued chronic diseases, as pulmonary consumption, dysentery, &c., and various other debilitating causes. Dropsy, in fact, is generally a symptom or sequence of other disorders, and rarely a disease of itself, arising, in the great majority of cases, from organic diseases of the heart, lungs, liver, kidneys, and other internal organs.

GENERAL DROPSY (*anasarca*) is either acute or passive, and consists in the effusion of *serum*, or the watery part of the blood, into the cellular substance situated beneath the skin.

Passive general Dropsy may arise from any of the debilitating causes above mentioned, but occurs most frequently from disease of the heart or some internal organ. Under these circumstances, the fluid is thrown out slowly; the face, or the feet and ankles, are swollen at night; and the parts pit on pressure, which is a characteristic symptom of the affection. At the commencement of the disease, the swelling disappears in the morning; but after some time becomes more permanent, and gradually ascends higher until the whole body is affected. While the Dropsy is gradually increasing, the face and eyelids become sallow, swollen, and bloated; the breathing oppressed; and the pulse frequent, weak, and sometimes intermitting. There is considerable thirst, the urine is scanty and high-coloured, the appetite greatly diminished, the bowels are constipated, and towards the termination of the disease, there is great debility, and the mental faculties are much impaired.

Acute general Dropsy commonly arises from some cause capable of suddenly checking perspiration, or it comes on during convalescence from scarlet fever or measles. This form of Dropsy is decidedly inflammatory, and may result from exposure to cold, wet, or any of the ordinary causes of inflammation: it is ushered in by shivering, full or hard pulse, headache, thirst, and heat of surface. These symptoms, in the course of twenty-four hours, are followed by dropsical swelling, which generally appears first in the face, and shortly afterwards extends to the trunk and extremities of the body. In most cases, there are well-marked inflammatory symptoms accompanied with headache, a sensation

of tightness about the chest, and difficulty of breathing; but sometimes there is very little general excitement, and the pulse may not rise above the natural standard. Dropsy, attended with inflammatory symptoms more or less acute, frequently follows scarlet fever, both in children and adults; and the one disease may supervene upon the other in the course of a few days or weeks. Acute general Dropsy is usually associated with inflammation of some internal organ; but cases are occasionally met with in which no local disorder can be traced.

TREATMENT OF GENERAL DROPSY. (*Anasarca.*) No remedy can be given with propriety in Dropsy without previously ascertaining whether or not it co-exists or is kept up by disease of an internal organ. The passive or chronic form of the affection is very seldom independent of organic disease; but cases do occasionally occur in which it arises from living on poor or unwholesome food, and then, of course, the treatment ought to consist in a more generous diet, along with a moderate quantity of wine or porter. When it is connected with chlorosis, (green sickness) ten drops of the tincture of steel are to be taken three times a-day in a little water, or the following mixture.

No. 153.

Compound mixture of iron (*Griffith's Mixture*), eight ounces,
Spirit of nutmeg, eight drachms. Mix. Two tablespoonfuls of this mixture to be taken as a dose once or twice a day.

When it occurs in hysterical females, the following mixture should be taken.

No. 154.

Compound infusion of gentian, eight ounces,
Sweet spirits of nitre,
Paregoric elixir (English), and
Compound tincture of cinnamon, of each an ounce. Mix. Two tablespoonfuls of this mixture to be taken three times a-day.

In all cases of Dropsy from the above or other directly debilitating causes, not depending on organic disease, such as loss of blood, weakness induced by ague, protracted fevers, dysentery, and other diseases, a nutritious diet, tonics, and mild diuretics, are indicated. A preparation of *iron*, as above, may be given; a

grain of *quinine* in port wine, three times daily; or one of the following mixtures.

No. 155.

Myrrh, in powder, half a drachm,
Decoction of Peruvian bark, six ounces,
Tincture of cascarilla, three drachms,
Liquor of the acetate of ammonia (spirit of Mindererus), two ounces. Two tablespoonfuls of this mixture to be taken thrice a-day.

No. 156.

Compound infusion of gentian, seven ounces,
Compound spirit of juniper, and
Tincture of orange peel, of each three drachms,
Elixir of vitriol, a drachm. Mix. Two tablespoonfuls to be given as a dose thrice a-day.

The following diuretic powders may also be taken.

No. 157.

Nitre, and

Cream of tartar, of each two drachms. Mix, and divide into twelve powders, three of which are to be taken in the course of the day, in a little of the infusion of gentian or in chamomile tea.

One or two tablespoonfuls of the decoction of aloes, or a moderate dose of cream of tartar and jalap, (see page 191, No. 125,) may be taken occasionally to keep the bowels open.

We have already mentioned that Dropsy is caused, in the great majority of cases, by disease of the heart or of some other internal organ: and, therefore, the maxim must always be kept in recollection, that until the cause is removed the effect must continue.

Dropsy from disease of the heart. In this case the patient suffers a considerable length of time before there is any appearance of Dropsy, the first symptom of which is a swollen or puffed state of the eyelids on rising in the morning. After some time the feet and ankles become swollen, and then the arms, the left arm being generally affected before the right. The effusion of fluid may gradually extend throughout the cellular membrane, or it may accumulate in the chest, or in the *pericardium*, or sac in which the heart is lodged. If symptoms of general excitement

be present, indicated by thirst, hot skin, and hard pulse, it will be advisable to apply leeches over the chest, or to draw blood from the arm, and afterwards the following pills are to be taken.

No. 158.

Extract of elaterium, three grains,

Extract of gentian, twenty-four grains. Mix, and divide into eight pills; one to be taken every hour, until the bowels are freely opened; or half a drop of croton may be given every two hours, until the same effect is produced. One or other of these remedies (the first is considered to be the most certain in its action) is to be given every two or three days, until the dropsical swelling disappears.

If the disease of the heart have existed long, and the patient be considerably debilitated in consequence, neither blood-letting nor active purging would be proper; in this case diuretics and tonics are indicated.

No. 159.

Carbonate of potash, and

Acetate of potash, of each two drachms,

Sweet spirits of nitre, and

Vinegar of squills, of each half an ounce,

Tincture of foxglove, thirty drops,

Camphor mixture, six ounces. Mix. Two tablespoonfuls to be taken as a dose twice or thrice a day.

No. 160.

Infusion of quassia, an ounce,

Infusion of foxglove, half an ounce. Mix. To be taken as a dose twice a day.

These mixtures should not be continued after the foxglove has considerably increased the quantity of urine, or has commenced to produce its peculiar effect of lowering the pulse, and this remedy must therefore be carefully watched, and not taken until sickness at stomach, giddiness, and other lowering symptoms are induced. (See *Foxglove*.) When one of the above mixtures has been used until the patient is considerably relieved, or until the system can no longer tolerate the action of the foxglove, the following tonic mixture is to be taken.

No. 161.

Tartarized iron, four scruples,

Compound spirit of juniper, half an ounce,

Infusion of calumba, seven ounces and a half. Mix. A tablespoonful to be taken as a dose thrice a day.

Dropsy from disease of the lungs. Dropsy may accompany or follow inflammation of the lungs, or may be brought on in consequence of prolonged chronic bronchitis; in the latter case it usually makes its appearance during winter, and attacks the patient several winters in succession, until at length he becomes greatly exhausted, and the fluid continuing to increase in the cellular membrane of the body and limbs, at last finds its way into the chest and pericardium, and causes death. The water accumulates first in the face and hands, and subsequently in the feet and ankles, and this is usually the case, whether the affection be acute or chronic.

The treatment when inflammatory action is present, is much the same as that required for Dropsy connected with disease of the heart: general and local blood-letting, counter-irritation by means of the tartar emetic ointment, rubbed in on the chest, (see page 26, No. 15,) the solution of tartar emetic with nitre, (see page 76, No. 55,) and the means recommended in another part of the work, are to be made use of until the urgent inflammatory symptoms are relieved, and then the following powders and mixture are to be taken.

No. 162.

Take of compound powder of jalap, two drachms,
Calomel, ten grains,
Foxglove, and
Squills, in powder, of each six grains,
Tartar emetic, one grain,
Aromatic powder, a scruple. Mix, and divide into six powders; one to be taken as a dose every night and morning.

No. 163.

Take of the acetate of potash, a drachm,
Compound spirit of juniper, a drachm,
Syrup of orange peel, half an ounce,
Cinnamon water, an ounce,
Water, seven ounces. Mix. To be taken in the course of the day.

When the Dropsy is consequent to chronic bronchitis, and attended with general debility, diuretics are to be administered, in conjunction with tonics, in any of the following forms.

No. 164.

Take powder of calumba, and
Powder of ginger, of each ten grains,
Powder of squills, one grain,
Cream of tartar, a drachm. Mix. To be taken as a dose thrice a day.

No. 165.

Camphor, a drachm,
Gum guiac, the same quantity,
Squills, in powder, half a drachm,
Opium, five grains,
Oil of juniper, a scruple,
Mucilage of gum arabic, a sufficient quantity to form fifty pills, two of which are to be taken three times a day.

No. 166.

Infusion of quassia, four ounces,
Liquor of the acetate of ammonia, (spirit of Mindererus,) two ounces,
Mucilage of gum arabic, half an ounce,
Sweet spirits of nitre, three drachms,
Paregoric elixir, half an ounce,
Tincture of squills, a drachm. Mix. Of this mixture two tablespoonfuls are to be taken twice a day.

Dropsy from disease of the liver is usually seated in the belly, and though the feet and ankles are in most cases swollen at the same time, yet it seldom happens that general Dropsy arises from liver complaints. (See *Dropsy of the Belly*.)

Dropsy from disease of the kidneys. Dropsy is very frequently connected with disease of the kidneys, but in most cases either the heart or lungs are affected at the same time, and then all that can be expected from the most judicious treatment, is merely an amelioration of the patient's suffering. Disease of the kidneys declares itself in some cases by pain in the loins, sickness at stomach, and occasional vomiting and purging; in others the symptoms are very obscure, and frequently overlooked, particularly when the Dropsy is also connected with an affection of the heart, lungs, or liver. A symptom of disease of the kidneys, which has of late years attracted considerable attention, is the presence of *albumen* in the urine. When albuminous urine is placed in a spoon and held over the flame of a candle, it coagu-

lates at a certain temperature, generally near the boiling point; and the same effect is produced by the addition of an acid. A little nitric acid (*aqua fortis*) dropped gradually into albuminous urine, makes it cloudy or slightly milky, and this appearance is soon followed by a deposit, more or less copious, of a white sediment. This symptom is of considerable value in conjunction with others, but is not alone sufficient to allow us to decide whether or not the kidneys are diseased; many medical men, however, are of opinion that coagulable urine is a direct indication of disease in these organs.

If there be pain in the loins and inflammatory symptoms present, cupping, or the application of leeches over the loins, and counter-irritation by means of the tartar-emetic ointment, should be used, in order to relieve the congested or inflamed kidneys, and then the following powders should be given to carry off the effused fluid.

No. 167.

Cream of tartar, a drachm,
Powder of squills, a grain,
Opium, in powder, half a grain. Mix. To be taken as a dose three times a day.

When the pulse is weak and the patient much debilitated, tonics are to be had recourse to, such as tartarized iron, with infusion of calumba, (No. 81,) and the *imperial* or cream of tartar beverage, (see page 12, No. 7,) may be drank freely during the day; indeed, this is the most suitable drink in all kinds of Dropsy.

In every case of Dropsy the treatment must be determined by the presence or absence of inflammatory action; in the former case blood-letting and the means necessary to subdue inflammation, are to be employed, in conjunction with diuretic and purgative remedies, to carry off the effused fluid; in the latter case tonic or strengthening remedies, diuretics, and mild purgatives are to be given.

Treatment of acute general Dropsy. In nearly all the cases of Dropsy which come on suddenly, whether from undue exposure to cold, or as a sequence of scarlatina, the pulse will be found full and hard, and other inflammatory symptoms may be detected. The treatment indicated in this form of Dropsy is of

course to subdue the inflammatory action, and this is done most effectually by blood-letting and the regular administration of tartar-emetic with nitre, (see page 76, No. 55.) The following ointment is strongly recommended by the distinguished German physician, J. Frank.

No. 168.

Mercurial ointment, two drachms,

Powder of the leaves of foxglove, one drachm. Mix. About the size of a hazel-nut of this ointment to be well rubbed in over the region of the stomach twice or thrice a day.

Local bleeding, by cupping or leeches, and counter-irritation, by means of blisters or tartar emetic ointment, are to be employed if inflammation of the lungs or of any other organ be detected. After the inflammation has been in a great measure subdued, diuretic and purgative remedies should be administered, with the intention of removing the effused fluid. Elaterium, in the manner above described, or cream of tartar, in half-ounce doses, may be given freely, in order to open the bowels, and afterwards the following diuretic mixture.

No. 169.

Acetate of potass, half an ounce,

Sweet spirits of nitre, half an ounce,

Peppermint water, six ounces,

Laudanum, a drachm and a half,

Compound spirit of juniper, two drachms,

Syrup of squills, an ounce. Mix. A tablespoonful to be taken three or four times daily.

In passive or chronic Dropsy, which is usually attended with considerable debility, the diet should be nourishing, and in quantity suited to the power of the digestive organs; but, on the other hand, in acute Dropsy, the patient must be strictly confined to low diet. It was formerly the custom to interdict dropsical patients from drinking; this however has been clearly shown to have been not only unnecessary, but injurious; the *imperial*, soda water, or any other mild drink, should be freely allowed; and those who have been long accustomed to drinking spirits, may be indulged with weak hollands, or gin punch, if not contra-indicated by inflammatory symptoms.

It was a common practice formerly to give vent to the water by making scarifications in the legs, in the form of the letter T, and mortification and death were frequently the consequences. Many medical men are now in the habit of puncturing the skin with a lancet, and even this plan is by no means unattended with danger, though it usually gives temporary relief, without producing any bad effects.

DROPSY OF THE BELLY. (*Ascites.*) This is the most common of all kinds of Dropsy, and may come on at any period of life. The causes which have been already enumerated as capable of developing general Dropsy may also bring on this form of the disease, which, as in the former affection, may be either active or passive; but in the great majority of cases it comes on slowly without inflammatory action, and is symptomatic of organic disorder of the abdominal viscera, more especially of the liver. Another not unfrequent cause is inflammation, either acute or chronic, of the *peritoneum* or lining membrane of the belly.

The water accumulates first at the lower part of the belly, which gradually enlarges, and the swelling goes on increasing until the entire abdomen becomes very prominent, tense, and shining. The swelling may be observed to gravitate towards the side on which the patient leans, and if the left hand be placed on one side of the belly, and a smart tap be given to the opposite side with the right hand, the water may be felt fluctuating. There are in most cases considerable thirst, loss of appetite, and dry cough, and the urine is scanty and of a dark brown colour. When the water has accumulated to a considerable extent, the breathing is oppressed, and the face and parts of the body not consecutively infiltrated become much emaciated. In some cases the feet and ankles are swollen before any change is observed in the size of the belly; but in general the lower extremities are not affected, until the abdominal Dropsy has existed some time.

Dropsy, as we have already mentioned, is almost invariably a symptom of organic disorder, and therefore, in order to direct the treatment on scientific principles, it is of the utmost importance that the organ affected should be known. In general there are well-marked symptoms of visceral obstruction before Dropsy makes its appearance, and after it is considerably developed, the general appearance of the patient allows a suffi-

ciently accurate opinion to be formed with regard to the organ which has given rise to the affusion. Abdominal Dropsy frequently results from disease of the heart, but by far the most common cause is obstruction in the liver. When the belly is much enlarged, and the lower extremities swollen, while the arms and upper parts of the body are emaciated, the face being at the same time thin, sharp, and of a sallow dingy colour, it may be inferred that the liver is diseased, or at all events that the cause of the Dropsy is situated in the belly; on the other hand, when the face is bloated, the lips swollen, so that the mouth remains partially open, and the eyes appear as if protruding from their orbits, there is every reason to suppose that the obstruction is in the chest, and that most probably the heart is diseased; and this opinion will be strengthened if it be ascertained that the dropsical swelling commenced at the feet and ankles, and subsequently extended to the belly. The reverse of this takes place when Dropsy arises from inflammation of the *peritoneum*, or from obstruction of the liver, or of any other abdominal organ; here the swelling of the lower extremities of the body is always a consecutive symptom.

There is another kind of Dropsy of the belly, called Encysted Dropsy, in which the water is confined in a cyst or membranous bag. In this case the swelling is at first unequal and confined to a particular part, and when the affection is farther advanced the belly is never so uniformly distended as in the former variety, where the water is loose in the abdominal cavity. Encysted Dropsy progresses slowly, is entirely local, and not attended with disorder of the general health.

TREATMENT OF DROPSY OF THE BELLY. The treatment of Dropsy in the belly is to be conducted on the principles applicable to that of general Dropsy. When the dropsical effusion takes place suddenly, in consequence of undue exposure to cold, or from any of the ordinary causes which give rise to acute diseases, it will be found connected with inflammation of the membrane called the *peritoneum*, which lines the belly and also envelopes all the organs contained in that cavity, more particularly of that portion of it which covers the liver. In this case the pulse is firm and hard, and tenderness or pain is experienced in some part of the belly, most frequently at the right side, under

the false ribs. The remedial means to be employed here are such as are generally resorted to for the purpose of subduing inflammation, the chief of which is general and local blood-letting, regulated according to the state of the pulse and the degree of febrile excitement. The application of a large blister over the belly, the raw surface being afterwards kept discharging by means of savine ointment, is one of the most powerful remedial means we possess in all cases, whether acute or sub-acute, unconnected with organic disease. Internally, the following remedies, recommended by Sir Astley Cooper, should be given, until the mouth become slightly affected by the mercury, and then the tincture of steel or the tartarized iron (see page 227, No. 161) is to be given as a tonic.

No. 170.

Blue pill, two grains, or calomel, one grain,
Squills, three grains. Mix, and form into a pill, to be taken every night at bed time.

No. 171.

Carbonate of ammonia, from seven to ten grains,
Sweet spirits of nitre, a drachm,
Tincture of foxglove, twenty drops,
Camphor mixture, an ounce and a half. Mix. The whole of this mixture to be given in the course of the day, and repeated daily.

It occasionally happens that abdominal Dropsy comes on suddenly, without any marked excitement of the system; general or local blood-letting is nevertheless not to be neglected, unless directly contra-indicated by the state of the pulse or other unequivocal symptoms of debility. Formerly Dropsy was always looked upon as a disease of debility, and consequently depletion was never had recourse to; but now that the disorder is better understood, bleeding, purging, and other lowering means are employed in a large proportion of cases with the greatest advantage.

In Dropsy of the belly supervening upon the scarlet fever or measles of children, the application of leeches over the belly, purging with cream of tartar or elaterium, and the careful administration of *foxglove*, is the treatment from which the greatest advantage may be expected. For a child six years of age, six leeches will be a sufficient number at a time, and if the bleeding

continue longer than necessary, the leech-bites should be touched with lunar caustic. The following powders are suited for the same age.

No. 172.

Extract of elaterium, one grain,
Calomel, twelve grains,

Aromatic powder, a scruple. Mix, and divide into twelve powders. One or two to be taken daily, until the bowels are freely opened.

No. 173.

Powder of squills, three grains,
Powder of foxglove, the same quantity,
Calomel, six grains,

Cinnamon, in powder, a scruple. Mix, and divide into twelve powders. One of these powders is to be given as a dose night and morning, and the effect of the foxglove carefully watched.

The remedy now considered to be the most efficacious in Dropsy resulting from obstruction in the liver, spleen, or pancreas, unattended with increased vascular action, is *iodine*, which, in numerous cases, has had the effect of relieving the patient in a surprising manner when other means had failed.

No. 174.

Iodine, a grain,
Iodide (or hydriodate) of potass, eight grains,
Water, (distilled water is generally used,) a pint. Mix. To be taken in the course of the day.

No. 175.

Iodine, ten grains,
Iodide (or hydriodate) of potass, a drachm,
Lard, an ounce. About the size of a nut of this ointment is to be rubbed in over the belly night and morning.

There is one thing which ought always to be kept in recollection, that in the majority of cases of abdominal Dropsy, accompanied with disease of the liver, the heart is affected at the same time, and therefore, where this complication exists, local bleeding, by cupping or leeches, and *foxglove*, should be employed: the latter remedy, by diminishing the heart's action, relieves the congestion of the liver, and at the same time, from its diuretic virtue, tends to carry off the effused fluid. By relieving the

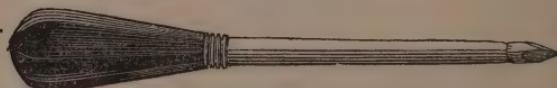
heart in this manner in the first instance, and afterwards employing iodine, as above directed, more benefit will accrue to the patient, than is likely to result from the practice so commonly resorted to, of giving mercury in all cases of Dropsy connected with *liver complaint*, a term which is exceedingly vague, since in the common acceptation, it comprehends all the disorders of that organ, however opposite to each other they may be in their character.

A valuable popular remedy, well known in all European countries, is a decoction of the green tops of common broom, parsley, and the root of dandelion. This drink, when taken in large quantities, has frequently an excellent effect in carrying off the effused fluid.

It is of importance in every case to attend to the state of the bowels; neglect in this respect may readily cause an increase of Dropsy; and constipation has been known to bring on a drop-sical swelling of the legs in old people, and in those labouring under debility from previous disease, or other causes, which has been removed by the use of opening medicine.

If the remedies employed have failed in producing any good effect, and the belly be painfully distended, accompanied with difficulty in breathing, it then becomes necessary to have recourse to *tapping*. The instrument used for this operation is called a *trocar*, which consists of a *perforator* and *canula*, or silver tube.

Perforator.



Canula.



Perforator in the canula.



The trocar is to be pushed into the belly, about an inch below

the navel, and as soon as it has entered the abdominal cavity, the perforator should be withdrawn, the canula at the same time being passed a little farther inwards; the water then immediately rushes through the tube into a vessel placed between the patient's thighs. While the water is flowing, a regular degree of pressure should be kept up by gradually tightening a bandage applied over the belly. A fainting fit would in all probability be the consequence of neglecting this precaution. It sometimes happens that the water suddenly ceases flowing; this is owing to the end of the canula being obstructed by a piece of intestine or omentum, which is to be kept back by means of a blunt-pointed probe, until all the water be discharged. The canula is then to be withdrawn, and a little bit of lint with adhesive plaster, placed over the opening, and a due degree of pressure applied over the belly, by means of a suitable bandage. Tapping gives the patient much relief, which is, unfortunately, in most cases, only of short duration, for the water soon accumulates again. The operation, however, is easily performed, unattended with danger, and does not interfere with the general treatment of the disease. The usual quantity of water drawn off at once is from twenty-five to thirty pints, but sometimes the quantity is much greater. Dr. Stoerk mentions a case in which twelve gallons were evacuated at one time, and there are many cases on record in which the operation has been performed in the same individual from fifty to a hundred times.

Medicine produces little or no effect on the encysted or ovarian Dropsy, which has been already alluded to; and moreover, in this variety of the disease the operation of tapping can only be performed with safety by an experienced surgeon.

DROPSY OF THE CHEST. (*Hydrothorax.*) This affection frequently results from inflammation, either acute or chronic, of the *pleura*, or serous membrane which lines the cavity of the chest, and envelops the organs contained in it; or it may take place from any of the causes which give rise to general Dropsy, but chiefly from disease of the heart and lungs. When the effusion is the consequence of inflammation of the *pleura*, the water is generally confined to one side of the chest, and is merely a symptom of pleurisy; but when it arises from organic disease of an internal organ, the water collects slowly in both sides of

the chest, and constitutes, in connexion with the original affection, a very formidable and dangerous disease.

When Dropsy of the Chest proceeds from disease of the heart, the first symptoms generally observed are, a swollen state of the eyelids in the morning, and of the feet and ankles at bed-time, accompanied with slight oppression of the chest and difficulty of breathing. The patient may be affected in this manner during a considerable length of time without suffering much inconvenience, until the water, which has been gradually accumulating, at last increases to such an extent that a train of very alarming symptoms is brought on. The face becomes much swollen and bloated; the lips assume a livid tint, approaching at times to a deep purple colour; the breathing is greatly oppressed; the patient starts in his sleep, and cannot lie in bed without having his head and shoulders raised with additional pillows; and towards the termination of the disease, the sensation of suffocation is so distressing on lying down that he is compelled to sleep sitting in a chair. The difficulty of breathing is much increased by going up-stairs, or by any ordinary exercise; the pulse is generally irregular and intermitting; and the feeling of anxiety is at times very distressing, and strongly depicted on the countenance. To these symptoms are generally added palpitations of the heart and a troublesome, dry cough.

When water collects in the chest in consequence of bronchitis or of inflammation of the lungs, the difficulty of breathing, and of lying in the horizontal position, is the same as in the former case; but the effusion is seldom to the same extent, and is not attended with palpitations of the heart and intermitting pulse. Although the above symptoms generally accompany water in the chest, yet they may arise from organic disorders of the heart and lungs, independent of Dropsy; and there is no doubt that prior to the discovery of the stethoscope, diseases of these organs were frequently mistaken for this affection.

TREATMENT. Water on the chest is in most cases connected with general Dropsy, and the same treatment is applicable to both affections. This species of Dropsy is commonly met with in individuals of debilitated, worn-out constitutions, and is frequently a disease of advanced life: blood-letting is therefore seldom required. The remedies which give most relief are foxglove,

nitre, and cream of tartar, in conjunction with quinine, tartarized iron, or other tonics. (See *General Dropsy from disease of the heart and lungs.*)

ACUTE DROPSY OF THE BRAIN, (*Acute Hydrocephalus, Water in the Head,*) is a very frequent and fatal disease among children. It consists in an inflammation of the membranes which surround the brain or line its central cavities; the Dropsy (or effusion of fluid into the cavities) being nothing more than an accidental occurrence towards the close of the disease, nearly in the same way as Dropsy of the belly may follow disease of the liver, or Dropsy of the chest may attend a disease of the heart.

CAUSES. It is often difficult to assign any cause for this complaint, because it frequently attacks robust children in the midst of apparent health; but we know from experience, that it has been produced by the following causes,—blows upon the head, exposure of the head to a hot sun, the sudden removal of some eruption on the head, irritation of the brain occasioned by teething, or by derangement of the bowels, and, finally, the disturbance of the blood-circulation in the brain, which often takes place in the course of hooping-cough, measles, scarlet fever, or small-pox. But of all the exciting causes of this fatal complaint, none is more frequent than Scrofula. Dr. HENNIS GREEN, of London, who has devoted himself entirely to the study of diseases of children, has thrown much light on acute Dropsy of the Brain, by showing, that in a great number of cases, it depends on a true scrofulous inflammation of the brain or its membranes. This explains the insidious nature of the complaint, its prevalence in certain families, the hereditary tendency to it, and its fatal termination; for we have every reason to fear that one species of this malady is just as fatal amongst children, as pulmonary consumption is amongst grown-up people.

All writers agree in distinguishing three stages of acute Dropsy of the Brain.

First stage (or period of inflammation.) After certain symptoms, which we shall presently notice under the title of *premonitory*, this stage is indicated by the presence of very characteristic symptoms; and when these are present, they point out very clearly the existence of water in the head. The most remarkable sign is a constant pain about the forehead, which often compels

the child to cry out, or to raise its little hand to the head as an indication of suffering; the fits of headache are attended by vomiting or sickness at stomach; and if, upon inquiry, it be found that there is no apparent cause for this vomiting, we shall have good reason to believe that it depends upon an affection of the brain. Notwithstanding the headache, the child appears to be drowsy, although occasionally rendered restless by inward suffering; he has a constant tendency to doze, and the countenance has a peculiar expression of mingled anxiety and dulness; the eyes are very sensible to light, and the ears to sound; the face is usually pale, but flushes up from time to time, and often the flush is confined to one side of the face; the breathing is tranquil, but interrupted every now and then by sighs. This flushing of the face with sighing is very characteristic of acute Dropsy of the Brain. The belly is often tender to the touch; but we must not be deceived by this symptom, which has more than once led experienced physicians astray: the tenderness bears more resemblance to sensitiveness of the skin than to pain; it will disappear upon strong pressure; and we shall find that other parts of the skin often show the same peculiar sensitiveness. The bowels are obstinately constipated; laxative medicines have no effect, and even the strongest purgatives produce but scanty stools. The general heat of the body is seldom increased, there is commonly no fever of any kind at this stage, and the pulse is, if any thing, slower than natural.

The characteristic signs, then, of the *first stage* of acute Dropsy of the Brain are, headache with vomiting, drowsiness, constipation of the bowels, slow pulse, flushing of the face, and sighing respiration. This stage may last from two to eight days, when it gradually passes into the next one.

Second stage (or period of effusion.) The headache now becomes more severe, but the vomiting continues for a day or two only, and then ceases; the bowels are still obstinately confined, and the belly begins to get flat, and often falls in to such a degree that the back-bone can be felt through it; the child gradually gets more dull, and soon lies in a stupid or deep sleep, which is occasionally broken by sharp cries or by convulsive movements; the senses are dull; the pupils of the eyes present various appearances, but squinting very often exists; the flushing of the face

and sighs are more evident than in the preceding stage; the sensibility of the skin now begins to give way, one part being very sensitive, while another part seems to have lost the power of feeling; the back of the neck, the arms, or the legs become stiff at certain times, but the stiffness soon passes away, or changes from one part of the body to the other. Towards the end of this period, which is very irregular in its duration, the pupils usually become dilated, the child is delirious, and often attacked by convulsive movements of the face or limbs.

Third stage (or period of palsy.) The commencement of this stage is marked by frequency of the pulse, which on the day before was perhaps 70 or 80, and has now suddenly risen to 130 or 140. Although the child lies in a state of complete stupor, he is often very restless, and tosses his hands constantly about the head, or picks the nose; the eyes are distorted by squinting, and the mouth often drawn to one side; when the child puts out the tongue, it frequently happens that it turns to one side; the muscles of the neck and back are very stiff; if we place the hand behind the child's head, we can raise him up in bed, as if he were a piece of board; the limbs are also irregularly affected with stiffness and palsy,—one arm, for example, may be stiff, while the other lies powerless by the side; and, what is peculiar to this disease, the palsy and stiffness may alternately pass from one side of the body to another, or from one limb to another, without any apparent cause. As this stage advances, the eyes become dull, and finally incapable of distinguishing light; all the muscles are relaxed; the urine and stools are passed in bed, the patient being unconscious of the calls of nature; the respiration gets quick and difficult; convulsive movements set in; and the patient dies in a fit of convulsion, or subsides into the deepest stupor, which terminates in death.

The duration of the malady which we have now briefly described is very various, but it never lasts beyond a month, and seldom destroys life (except when the patient is very young,) before three days. The usual duration is from twelve to twenty days. It may occur at any period of childhood, and affects girls as frequently as boys: the period at which children are most exposed is from the age of four to seven years. We have already said that scrofulous children are most subject to water in the

head, and although the disease may come on suddenly, it is often preceded by certain symptoms which are called *premonitory*: to these the attention of parents cannot be too strongly directed, because judicious and well-timed medical treatment during the *premonitory* period may have the effect of stopping a complaint, which is almost always fatal when it is once completely formed.

To understand the nature and cause of the *premonitory* symptoms now alluded to, we should state, that it has been shown by Dr. Hennis Green that acute Dropsy of the Brain is often preceded, for months or years, by a slow *scrofulous* inflammation of the membranes of the brain. The symptoms occasioned by this inflammation are very obscure, on account of its scrofulous nature, and the inflammation itself is liable to be aggravated by any thing which injures the general health of the patient; hence the great variety of symptoms which usually precede acute Dropsy in the Head for several months; and hence, also, the absolute necessity of our attending to the child's health at this time, when much can be done to avert the threatened danger. The existence, then, of this scrofulous inflammation of the brain, or in other words, the *premonitory stage* of acute Dropsy in the Head, is indicated by the following signs: the child loses its natural liveliness of temper, and becomes dull and morose; the sleep is disturbed, and the little patient often drowsy during the day; he complains, every now and then, of headache; the bowels are usually costive, and occasional vomiting, with accesses of fever and tenderness of the belly, are noticed; the gait of the child is sometimes very peculiar during this stage,—he staggers when walking, stumbles without any cause, or may drag one foot after him; squinting and convulsive movements are sometimes observed, with a bending in of the thumbs, and curving of the toes towards the soles of the feet. These symptoms may last, as we have said, for several months or years; they are frequently mistaken for infantile remittent fever; but at length, severe headache, with vomiting, constipation, and stupor, supervenes, and the slow disease becomes all at once converted into the acute malady.

All modern physicians acknowledge that acute Dropsy of the Brain almost invariably proves fatal when it has passed the *first* stage without having been relieved; our great anxiety should, therefore, be to detect the disease in its most early stages, and

not to confound it with other complaints of children, to which it may bear some resemblance. The symptoms of the *first* stage of acute Dropsy of the Brain should be *distinguished* from those of the typhus fever, from the commencement of eruptive disorders, and from the peculiar head symptoms which sometimes accompany exhaustion of the vital powers in young children. Acute cerebral Dropsy is often preceded, for many weeks or months, by the signs of scrofulous inflammation, which we have already noticed; typhus fever is never preceded by any symptoms of a peculiar nature for more than a few days: in acute Dropsy of the Brain, we have *severe* headache, sleepiness, vomiting, costiveness, and slow pulse at the very beginning; in typhus fever, the headache is not so severe; the bowels instead of being confined at first are *loose*; there is much less constant vomiting; the pulse is quick, and the skin hot in the first stage of the fever, while in cerebral Dropsy, the pulse is slow or natural, and the skin usually cool. The onset of eruptive fevers is marked by burning heat of skin, quick pulse, and agitation of the patient at night, often attended by delirium; the bowels are not obstinately confined. When head-symptoms come on, as a consequence of exhausted vital power, they sometimes bear a very close resemblance to those of acute Dropsy of the Brain,—the chief points which should guide us are the connexion between the head-symptoms and any weakening cause, such as loss of blood, bad food, long-continued flux from the bowels, &c.; the emaciated and exhausted appearance of the little patient; the very quick pulse; the irritability and greenish mucous stools which are passed in considerable quantities. Worms are said to give rise to symptoms which may be mistaken for those of acute Dropsy of the Brain: this is a popular error. Worms may excite inflammation of the brain or its membranes, by causing irritation and derangement of the bowels, but they do not produce the constant succession of symptoms which characterise acute cerebral Dropsy, unless they have actually excited that disease within the head. Worms may, however, occasion symptoms bearing a certain degree of resemblance to the slow, scrofulous inflammation which precedes acute cerebral Dropsy; and it will often be very difficult to distinguish these symptoms, or the effects of some bowel complaints, from the premonitory signs of

that dangerous affection. The periodical return of headache, the occasional constipation of the bowels with drowsiness, the absence of quickness of pulse, and tumidity of the abdomen, (particularly when all these occur in a scrofulous subject) should lead us to suspect the existence of some mischief within the head, and to take our measures accordingly.

TREATMENT. We cannot impress too strongly on the minds of parents a knowledge of the fact, that acute Dropsy of the Brain is really an *inflammatory* disease, and that our only hope of curing it depends on the early and prompt use of active measures. But here a distinction of much practical importance must be drawn. The disease sometimes attacks robust children, in the midst of excellent health : in a majority of cases, however, it affects weakly children of a scrofulous constitution, who have suffered for some time under the slow scrofulous inflammation of the brain which we have already noticed, and which constitutes the *premonitory* stage of acute Dropsy of the Brain. Now, although the treatment must be directed in all cases, against the inflammatory condition of the brain, yet it must be modified very considerably according to the particular case which we may have to deal with. When the patient is strong, of healthy constitution, and apparently free from scrofulous taint, we must attack the disease at once, by blood-letting, purgatives, mercury, and the constant application of cold to the head. From a child above four years of age, four to eight ounces of blood should be drawn from the arm, and if a very decided effect be not produced, the blood-letting must be repeated two or three times, until that stage of the complaint arrives which is marked by palsy. If the patient be much reduced by the first bleeding, then leeches (four to eight, according to the child's age,) should be applied to the temples or behind the ears; for younger children we must content ourselves with the local abstraction of blood by leeches. Having relieved the inflammatory congestion of blood within the head, the next object of the attendant must be to act powerfully on the bowels by means of purgative medicines. Very active remedies are required for this purpose, because, as we have already mentioned, obstinate constipation is one of the most characteristic symptoms of the complaint. Twenty grains of calomel, with an equal quantity of jalap, or the compound scammony powder, may be divided into

four parts, one of which may be given every three hours, until the bowels are fully opened; the action of the purgative should be assisted by the *black draught*, (No. 22, page 32,) or by a clyster, (No. 18, page 32.) Should the calomel and scammony, or any other strong purgative fail to evacuate the bowels, we have no hesitation in recommending the use of still more powerful medicines, such as croton oil or elaterium. These must be given with caution, and their use abandoned if they seem to irritate the intestines too much. From an eighth to a quarter of a drop of croton oil, or one eighth of a grain of the extract of elaterium, may be given every two or three hours until the bowels are completely evacuated, after which two or three stools a day should, if possible, be procured by saline purgatives.

Of internal remedies, the only one upon which much dependence can be placed is mercury. Very young children may take the mercury and chalk, in doses of from one grain to three, every three hours; to older children we may give three grains of calomel, with one-sixth of a grain of tartar emetic, every three hours, and the mercury must be continued for several days, until a decided impression be made upon the disease. Some practitioners advise us to rub in the mercurial ointment, (a scruple to a drachm during the day,) over the arms, legs, or belly, in order to render the action of that substance more quick and energetic. As soon as the leeches have ceased to bleed, the head must be shaven, and cold lotions should be applied to the head, or a stream of cold water be allowed to flow constantly on the crown of the head, from the height of two or three inches. This may be easily done by placing a small tub of water at the head of the bed, and conducting the water from it by a strip of tow or linen. Ice-bags may be applied instead of cold water, but their use requires great caution. After the abstraction of blood and free purging, some persons prefer blistering the crown of the head to the employment of cold. There is no objection to this practice, which has often been beneficial: a large blister may be placed over the crown of the head, and when the skin has broken, the raw surface may be dressed twice a day with mild mercurial ointment. As the irritation from teething is a frequent exciting cause of water in the head, it will always be prudent to examine the child's mouth, and to divide the gums freely, if we see any

appearance of redness or swelling over a tooth which is approaching the surface. It is hardly necessary to mention that during our treatment the child should be kept in the most perfect state of quiet, in a dark room, and that every cause of disturbance, &c. should be cautiously removed. No food should be given during the first stage, and the drink should consist of barley-water, infusion of mallows, toast and water, &c., in which a few grains of nitre may be dissolved.

In the second stage of water in the head, we must have recourse to the same means, but they are to be employed more cautiously, and with a more sparing hand: a few leeches to the temples, purgatives, and cold lotions to the head, are still the principal remedies: the calomel is to be continued, and to quiet the irritation which now prevails, it may be mixed with a few grains of James's powder; it is at this stage also that blisters to the nape of the neck, or on the inside of the legs, may be had recourse to with advantage.

In the last stage of acute water in the head, little else can be done than to mitigate the patient's sufferings. If the appetite continue, some light food may be allowed, and three or four grains of Dover's powder, with an equal quantity of mercury and chalk, are to be administered three times a day: the action of the bowels is to be solicited by mild saline purgatives, and we may endeavour to excite the skin or kidneys by one of the following.

No. 176.

Tincture of digitalis, thirty drops,
Infusion of valerian, two ounces,
Water, six ounces. Mix. An ounce to be taken every three hours.

No. 177.

Liquor of the acetate of ammonia, three ounces,
Syrup of poppies, half an ounce,
Tincture of squills, half a drachm. A teaspoonful to be taken every two hours.

The treatment of acute water in the head, when it occurs in scrofulous children, must be conducted upon the above principles; but we should always remember that in such cases it is probably connected with a scrofulous kind of inflammation, which

does not yield so readily to active measures. Weakly children of this class will not bear general blood-letting so well, and in most cases it will be found sufficient to apply leeches behind the ears: mercury, also, has less power over this species of inflammation; still we are compelled to employ small doses of calomel, or mercury and chalk. Blisters are more useful in this form than in the preceding one, and it will be advisable to support the patient at an earlier period with some very light nourishment, such as sago, weak broth, &c.

But above all things, the utmost attention should be directed to *prevent* the occurrence of the disease in children who may be supposed to have a tendency to it. We have already pointed out the chief symptoms (*premonitory*) which indicate this tendency, and have shown that they are generally connected with a scrofulous disease of the brain; hence constant watchfulness is required in children of scrofulous constitutions, and more particularly so when any of the family has been cut off by convulsions, or by diseases of the head. The main points to be attended to are the state of the digestive organs, and the condition of the gums during teething. The food should be of a nourishing quality, but all nutriment which is difficult of digestion should be avoided; the bowels should be kept open by mild laxative medicines, and the child should have constant exercise in the open air; in a word, every means must be employed to improve the general health and remove or counteract the tendency to scrofulous inflammations, (see *Scrofula*.) During the periods of cutting the teeth, the gums should be frequently examined, and the lancet be freely used, if there appear any signs of irritation which indicate a necessity for dividing the gums. When the child complains of occasional head-ache, with irregular fever, constipated bowels, and an inclination to drowsiness, it may be advisable to apply two or three leeches behind the ears, and to evacuate the intestines by active purgatives. Much benefit will also be derived in cases of this kind by keeping a blister open for several weeks on the nape of the neck, or by placing a seton in the upper part of the arm. The tepid bath should be used once a week, and a jugful of cold water poured over the child's head while he is in the bath. The progress of eruptions about the head must be watched, nor should they be interfered with

without due caution. Finally, it should be remembered that falls, blows on the head, &c., are apt to excite acute inflammation within the head in children who are predisposed to brain disorders, and that their intellectual faculties cannot be exerted to any powerful or extraordinary efforts without danger of producing similar effects.

CHRONIC DROPSY OF THE BRAIN.—Chronic Dropsy of the Brain (*Chronic Hydrocephalus*) consists in the slow collection of a clear fluid in the cavities of the brain, generally accompanied by gradual enlargement of the head. This disease may either occur in the child before it is born, or may come on very soon after birth. In the first case it is usually attended by such changes in the brain itself, as render it impossible for the child to live; in the second case the head enlarges slowly, or even retains its natural size, and some small hope remains of obtaining a cure; hence we shall confine ourselves to giving an account of this latter form.

The causes which excite chronic Dropsy of the Brain in children are very obscure. It is said to occur most frequently in the children of scrofulous parents; as a consequence of fright experienced during pregnancy; as the effect of depressing passions, drunkenness, &c. on the part of the mother; it may also be produced in the infant after birth, by improper food, teething, spirituous liquors, affections of the bowels, or other complaints which reduce the strength.

SYMPTOMS. Chronic Dropsy of the Brain sometimes comes on in a very insidious manner, and often escapes our notice at an early stage. When the natural articulations of the head are open, and the skull much enlarged in size, with a sensation of fluctuation at the anterior part of the crown of the head, there can be no mistake about the nature of the disease; but when the skull retains its natural shape and size, or enlarges very slowly, and when the child's health is not much deranged, it is not an easy matter to discover the nature of the complaint, although it is of the utmost importance that we should be acquainted with its existence as soon as possible. The early symptoms, then, of chronic Dropsy of the Brain are, an unusual peevishness and perversity of temper, dulness, and an inclination to sleep; irregular appetite, with constipation of the bowels and scanty urine:

if the child be able to walk about, it will often be observed that the legs are weak and small in proportion to the rest of the body, while the belly is large and tense. The senses of hearing and seeing are at first acute, but soon become dull, and are more or less injured; the child cannot articulate words distinctly; the tongue seems to be getting too large for the mouth, and the mental faculties are also weakened. These latter symptoms should always excite our attention to the state of the head in young children; the head should be carefully measured with a tape, and if it be found to have increased very sensibly in a short time, we may be almost certain that the child labours under chronic Dropsy of the Brain.

As the disease advances the symptoms become more clear. The mental and bodily powers are more or less injured; the memory is lost, and the power of speech much diminished; a copious saliva flows from the mouth; the child is unable to support himself on his legs, and the head begins to hang on one side; the pupils are dilated, the sight lost, and the eyes frequently affected with squinting; the bowels are still irregular, and the contents of the stomach are often vomited up.

In the *third stage* of the disease the head becomes so enlarged that the child is no longer able to support it; he lies in a state of stupidity, and does not notice what passes around him; the senses are almost completely destroyed; the power of moving is lost, the evacuations are passed without the patient's being conscious of them; in this state he lies for a considerable time, when he is cut off by convulsions, or sinks into profound insensibility, which soon terminates in death.

TREATMENT. Chronic Dropsy of the Brain is an extremely fatal disease, but even over it the power of medicine has often triumphed. Our first object must be to remove any irritation which may exist about the head, by leeches and mild purgatives; but these must not be carried far; one or two applications of leeches (at the early stage of the disease) will be sufficient. In order to remove the tendency which exists in the brain to the formation of a fluid within its cavities, various remedies are employed. One of the safest courses to pursue is to administer mercury with chalk for some time, until the mercury begins to act on the constitution of the patient. It may be given alone in

the dose of one or two grains (to an infant) night and morning, or combined with a purgative, in the following manner.

No. 178.

Mercury, with chalk, one scruple,

Powdered rhubarb, thirty grains. Mix, and divide into ten powders; one, two, or three powders to be given gradually, according to the child's age.

The head should be kept cool, the hair may be cut off, and if there exist any signs of congestion of the brain, it will be prudent to apply cold lotions to the crown of the head. The action of the mercury will be aided by occasional doses of castor oil, or any other mild laxative, or by a clyster, containing from one to four drachms (according to the age of the child) of oil of turpentine, which may be given twice a week. During this course of medicine the child must take light and moderately nutritious food; *stimulating tepid* baths are also useful during this stage of the disease; the child may be placed in one three times a week, and kept in the bath from ten to twenty minutes. Six drachms of the sulphuret of potass may be dissolved in the bath, or it may be prepared by adding one ounce of nitro-muriatic acid to each gallon of water, until the mixture present the taste of vinegar. The child's head may be frequently washed with the latter solution, and a blister may be occasionally placed on the sides of the head, behind the ears, or on the nape of the neck. By the assiduous use of these means for several weeks, or even months, the disease may sometimes be checked; but it more frequently continues its progress, and the head gradually becomes larger. When this is the case but little hope remains, yet children have recovered, either when compression has been used, or when the fluid has been drawn off by making a small opening into the skull. For the purpose of compression, the head may be firmly bound with a linen bandage, two inches wide, and wound several times round the head, or with strips of common sticking-plaster. The operation of giving issue to the fluid by means of a small instrument called a trocar, should never be undertaken by any but a medical man.

DYSENTERY.

In treating of Dysentery, the division into acute and chronic may be adopted, though the disease presents many different forms and complications.

ACUTE DYSENTERY is usually preceded by a disordered state of the stomach and bowels, as indicated by nausea, vomiting, loss of appetite, flatulence, and constipation, or the bowels may have been relaxed for some time previous. It commences with frequent evacuations, accompanied by severe griping pains, great desire to strain while at stool, and a burning sensation at the *rectum* and *anus*; there are frequent chills, followed by flushes of heat; the pulse is quick, or perhaps not much affected; the stools at first may be copious and feculent, and contain pieces of hardened faeces, but they soon become scanty, and consist chiefly of mucous matter tinged with blood; a dull, uneasy sensation is felt in the belly, which is relieved after each evacuation: the tongue is furred; and there is considerable thirst. These are the most prominent symptoms of the disease, as it occurs in its mildest forms; but in its more severe states all the symptoms are aggravated; the calls to stool are very frequent and distressing, and sometimes accompanied with cramps in the thighs and legs; the abdominal pain is more constant, and increased on pressure with the hand, though often merely a feeling of heat is complained of, except when a motion is about to be passed; the tongue is thickly coated, and the appetite gone, while the thirst becomes urgent, the patient preferring cold water, each draught of which is invariably followed by severe griping; the urine is high-coloured, passed in small quantities, and often with great pain and difficulty: the skin is hot and dry, or perhaps only feels hot over the abdomen, the extremities being cold, though sometimes there may be free perspiration. With the advance of the disease, the strength gives way, there is despondency, rapid emaciation ensues, and the straining is occasionally so violent that a portion of the gut descends beyond the *anus*, greatly augmenting the suffering. As a fatal termination approaches, the abdomen becomes swelled and tender to the touch; the tongue dry and glazed, or covered with a dry, brown fur; the motions

are passed in bed, the patient being unable to get out to reach the close-stool; the extremities of the body become cold; and delirium, hiccup, and cold clammy perspirations, are the fore-runners of death.

The character of the evacuations varies much, both as regards appearance and quantity; sometimes they are copious and watery, containing shreds of matter like the washings of beef, or they are scanty, and of a dark brown or greenish colour, with streaks of blood; at other times, after violent straining, only a small quantity of slimy mucus is passed. The odour, in all cases, is peculiar, but sometimes it is extremely offensive, particularly in the last stage; the motions may then be composed of pure blood, or a dark fluid, mixed with feculent matter, and occasionally small whitish masses, resembling fat, are discharged.

The disease, in its worst form, may terminate in a few days, though generally its duration is from two to five weeks. The symptoms may be considered favourable, when the griping pain and straining at stool diminish, and the motions are less frequent and more healthy in their appearance, while a gentle perspiration breaks out over the whole body, with abatement of the febrile excitement. It may be remarked that changes for the better will sometimes take place, resembling remissions; these may last for twelve or twenty hours, or longer, and be followed by a return of all the bad symptoms.

The disease sometimes assumes a low typhoid or malignant type, and is then attended with great general debility; the pulse is weak and quick, or at the commencement, not above the natural beat; the tongue at first is loaded, but afterwards dark-coloured or almost black, and a dark mucus collects about the teeth and gums; the breath is fetid; the countenance pale and anxious; the stools are dark and bloody, or they may be watery, dark-coloured, and very offensive; and chills are experienced during the attack, the skin being harsh, dry, and warm. In the last stage, the patient lies on his back in bed; an offensive odour exhales from the body, and his evacuations escape involuntarily; eruptions sometimes appear on the neck, breast, and arms, bleeding from the nose may occur; and he becomes delirious, or before death sinks into a state of stupor.

In warm climates, dysentery is witnessed in its most intense

forms, and is very frequently complicated with great derangement of the biliary organs, or disease of the liver. With most of the symptoms of the first or most common variety, the tongue has a yellow coating, or a white covering over its surface, and appears swollen or larger than natural ; there is nausea, and bilious vomiting, occasional chills, hot, dry skin, and quick, irritable pulse ; the burning sensation in the rectum, and straining at stool, are very severe ; the evacuations may be copious, yellow-coloured, or of a dark brown colour and uniform consistence ; and sometimes they are frothy, and have a greenish, mixed appearance, with streaks of blood. The stools at the commencement, and even through the course of the disorder, may be little, if at all tinged with blood, though usually in the last stage they are mixed with dark, bloody matter. A dull, heavy, uneasy feeling is experienced in the right side, increased by pressing with the fingers under the ribs, the pain often stretching to the right shoulder, where there may be a constant aching sensation ; there is sometimes a feeling of oppression at the chest ; the patient is troubled with a harassing, irritating cough ; and in the last stage the tongue is red, smooth, or dark-coloured and dry. The first symptoms of Dysentery, where the liver has been long diseased, are frequently a sensation of fulness and uneasiness at the stomach and right side, copious discharges of bilious matter, with pain of belly and griping.

In our West India colonies this is the most fatal disease to which the negro population are subject ; the low or malignant form is most frequently met with amongst them, and often prevails epidemically, proving extremely destructive of life. Even in those cases where there are at the commencement full quick pulse, hot skin, and considerable febrile excitement, the strength of the system soon gives way, and the disease takes on the symptoms of the malignant variety. The complication with liver complaint is not common in the negro race.

CHRONIC DYSENTERY differs from the acute form in being milder in its symptoms, but much more protracted in its course ; it is not often met with in this country, except with those who have long resided in warm climates, where it chiefly prevails. An acute attack often ends in the chronic form, or it commences with simple looseness of the bowels. In hot climates it will

generally be found connected with some disease of the liver or spleen; it follows as a consequence, or occurs in the course of intermittent or remittent fevers.

In chronic Dysentery the pulse is but little disturbed, except towards evening, when it may be quickened and accompanied with slight feverish symptoms; the evacuations are much less frequent than in the acute states, and are seldom attended with much straining, though in general there is a griping or twisting sensation about the navel before each motion, which is entirely relieved after leaving the close-stool. There is not often pain or pressure over the belly, (which may be swelled and hard, or flatter than usual,) though sometimes there is a heavy feeling, or sensation of heat and soreness, as the patient may express it. The stools vary greatly, even in the same patient, at different times; they may be copious and of a dark brown colour, or white, like clay diffused in water; hence the disease has been called *white flux*; or there is feculent matter intimately mingled with blood; sometimes there is a bloody mucus mixed with a substance resembling matter, (pus,) or the evacuations have a marbled and greenish appearance. The tongue may have a thick yellowish coating, with bright red edges, or it is red and smooth over all its surface, but in some cases it is scarcely altered from its natural state. There is much emaciation, the skin feels harsh and dry, thirst is present, and the appetite impaired, or voracious and perverted. We have known persons, labouring under this disease, eat by stealth articles of diet the most pernicious, and which they were well aware would be injurious. The food is sometimes passed in an undigested state shortly after eating. In the advanced stages of the malady the abdomen is swollen, the countenance sunk and expressive of anxiety, a sour odour often exhales from the skin, the strength fails, the feverish symptoms are increased, particularly at night; and at last the patient becomes dropsical, or sinks from exhaustion and irritation. Chronic Dysentery is usually extremely tedious and difficult of cure; we have seen patients in the West Indies suffer from it for years, with merely occasional intervals of relief.

CAUSES. Dysentery prevails chiefly in autumn and the beginning of winter, during cold moist weather, following great heat or long-continued drought; or it may be induced by high

ranges of temperature, succeeding to moist and very wet weather. An attack may be brought on by exposure to cold and wet, or to the dews of night, particularly after fatigue; by wearing damp clothing, by scanty and unwholesome food or drink, eating acid or unripe fruits, the use of water contaminated with impurities, breathing air rendered impure by many persons being crowded together, as in camps, vessels, prisons, &c., and then the disease is likely to assume the typhoid and malignant forms, and may become highly contagious; by constipation and the accumulation of morbid biliary secretions, the use of intoxicating liquors in excess, very rich stimulating diet, exhalations from the soil and from marshes, as well as putrid animal exhalations and epidemic states of the atmosphere. In hot countries the disease is frequently associated with worms, particularly in the dark races, who are peculiarly subject to bowel complaints.

Chronic Dysentery differs only in degree from the acute form, and arises from the same causes.

TREATMENT. It is of the utmost consequence that no time be lost in resorting to the necessary treatment, as acute Dysentery will be much more protracted and dangerous if neglected during the first few days.

Blood-letting will be required when the abdominal pain is severe, the skin warm, and the pulse quick and full; the quantity to be taken must be regulated by the age, strength, and constitution of the patient, and severity of the attack: but a good general rule is to allow the blood to flow from the arm until the pain is relieved or faintness comes on, the patient being in the erect position. In the milder cases, when there is very little or no general excitement, and not much pain complained of, local bleeding, by the application of leeches to the belly, or by cupping, will be sufficient; and either of these means of abstracting blood may be had recourse to, if the pain continue after bleeding from the arm. When the leeches drop off, or after cupping, hot fomentations are to be applied, or large emollient poultices.

If the tongue be foul, or the attack do not begin with severe retching and vomiting, the treatment may be commenced by administering an emetic of twenty-five to thirty grains of ipecacuan: after its action, or should an emetic not be necessary, half an ounce to two ounces of castor-oil, with twenty drops of

laudanum, may be given. When the bowels have been cleared out by the oil, which will probably be in eight or ten hours, one of the following pills should be given every fourth or sixth hour.

No. 179.

Take of opium, six grains,
Ipecacuan, twenty-four grains,
Calomel, twelve grains,
Mucilage, or syrup, a sufficient quantity. Mix, and divide into twelve pills.

The griping and pain of belly will often be much relieved by rubbing turpentine over the abdomen, and applying hot fomentations immediately after; but if the repeated use of the turpentine fail in affording relief, it will then be necessary to apply a large blister. Warm baths, once or twice a day, will also be found very useful in alleviating pain and inducing perspiration.

The great desire to strain at stool should not be indulged in, as the pain and irritation are thereby greatly increased; this unpleasant symptom, as well as the burning sensation in the rectum and anus, will frequently be relieved by administering an injection of arrow-root, in small quantity, with fifteen or twenty drops of laudanum; and after each evacuation the patient will find ease by sitting over the steam of hot water, or applying hot fomentations to the parts.

Gentle opening medicine should be given every third or fourth morning; but in very few instances, if ever, will it be prudent or necessary to direct strong purgatives to be taken, the effect of which would only tend to increase the inflammation of the mucous or lining membrane of the intestinal canal, which in general constitutes the disease. The dose of castor-oil may be repeated, or a teaspoonful of Henry's calcined magnesia, with twenty-six grains of rhubarb, may be given, or two drachms of Epsom salts and thirty grains of magnesia, in a glass of barley water, assisting the operation of the medicine by emollient injections, containing a tablespoonful or two of olive or castor-oil.

As Dysentery appears in its most violent forms in warm climates, the treatment must be energetic in proportion, though the same in principle as that already recommended. When the abdominal pain, fever, and other inflammatory symptoms run

high, the bleeding from the arm must be decisive, and repeated until these symptoms are removed or abated; nor should local depletion be neglected; and since the disease in hot climates is generally preceded by looseness of the bowels, purgatives are even less demanded than in this country.

In Dysentery connected with disease of the liver, calomel may be used with more freedom. After depletion, and an emetic if required, the following may be taken.

No. 180.

Calomel eight grains,

Ipecacuan, three grains,

Opium, one grain. Mix, and every six hours afterwards one of the pills, (No. 179,) with twice the quantity of calomel, and mild purges occasionally, are to be administered.

Dysentery within the tropics is often extremely insidious in its commencement; looseness of the bowels and slight griping pains may exist for weeks, unheeded by the patient, until exhaustion of strength and some aggravation of the symptoms compel him to take to bed; and though the attack has been apparently very mild, yet the delay which has taken place in commencing the treatment may lead to a fatal termination whatever means be employed. We cannot therefore point out in too strong terms the necessity of attending at once to the slightest derangement of the bowels in tropical climates, since a gentle purgative, followed at night by fifteen grains of Dover's powder, or a pill composed of two grains of opium and two grains of ipecacuan repeated for a few nights, and the occasional use of the warm bath, will frequently put a stop to those symptoms, which otherwise might have ended in danger or destruction to life.

In the low or typhoid form of the disease, the treatment above advised will be applicable with the exception of blood-letting, which should not be practised; leeches however may be applied over the abdomen, if there be pain on pressure. In the more dangerous or malignant forms, when there is extreme depression of the vital powers, the strength must be supported. Two grains of camphor may be added to each of the pills, (No. 179,) or the following given every six hours.

No. 181.

Mercury, with chalk, four grains,
Ipecacuan, one grain,
Camphor, two grains,
Opium, one grain. Mix. To be made into two pills, or taken in a little jelly.

Warm baths, turpentine fomentations, and injections, are to be had recourse to in the manner already directed.

When vomiting is a troublesome symptom, apply a mustard poultice over the stomach, or let the turpentine fomentation be used; and medicine should be administered in the form of pill, as more likely to remain on the stomach.

Flatulent distension of the abdomen will often be relieved by injections, containing each two drachms of turpentine.

An enema of infusion of ipecacuan-root, of the following strength, administered twice a day or oftener, we have known to be very serviceable in the Dysentery of the West Indies.

No. 182.

Ipecacuan root, one ounce; to be well bruised, and a quart of boiling water poured over it; then allow it to remain near the fire for eight or ten hours; the injection to be composed of half a pint of this infusion, to which, occasionally, fifteen or twenty drops of laudanum may be added.

Hiccup may be generally considered a very dangerous symptom, unless when it occurs early in the attack; fifteen grains of carbonate of soda, with ten drops of laudanum, may then sometimes remove it.

Since the action of medicine varies greatly in different individuals, from peculiarity of constitution or other causes, the doses require to be regulated accordingly; sometimes a small quantity of opium will act very powerfully, and at other times large doses must be given to produce any effect. In the treatment of Dysentery, therefore, the action of the opium must be watched, and when it produces great drowsiness or constant sleep, it must be left off altogether for a time, or the dose must be diminished; but if, on the contrary, the pain be not relieved, or sleep induced by the ordinary doses, the quantity must be gradually increased. These remarks will also apply to ipecacuan; sometimes a very small quantity, even a grain or two, will cause

nausea and vomiting, while in other instances it may be given in large doses without sickness or vomiting being excited.

Astringent and tonic medicines are not to be exhibited in the acute stage; but during convalescence, or after all the inflammatory symptoms have been subdued, and an exhausting discharge from the bowels continues, they will be found very useful.

No. 183.

Prepared chalk,
Gum arabic, in powder, and
Sugar, of each half an ounce,
Cinnamon-water, eight ounces,
Syrup of poppies, half an ounce,
Tincture of catechu, three drachms. Mix. Two tablespoonfuls to be taken as a dose every six hours.

No. 184.

Gum arabic, two drachms,
Sugar, half an ounce,
Laudanum, two drachms,
Tincture of kino or of catechu, three drachms,
Peppermint-water, eight ounces. Mix. A tablespoonful to be taken three or four times a day.

As tonic mixtures, either of the following may be used.

No. 185.

Peruvian bark, (Cinchona,) six drachms; to be infused in a pint of water for eight hours and strained; then add

Wine of ipecacuan, three drachms,
Laudanum, one drachm. Mix. A wineglassful three or four times in twenty-four hours.

No. 186.

Infusion of bark, (as above,) a pint,
Quinine, ten grains,
Elixir of vitriol, half a drachm. Mix. A wineglassful twice a day.

During the period of convalescence, and for a long time after, the causes which gave rise to the attack should be carefully avoided, and no indiscretion committed in diet, drink, or exposure, as there is very often a tendency to relapse in this disease, even from the slightest causes. Wearing flannel next the skin will be found a most valuable protection from the effects of cold

and vicissitudes of temperature, and is even more useful in hot than in temperate countries.

Treatment of Chronic Dysentery. The treatment of acute Dysentery will apply to the chronic form, with but slight modification. General blood-letting is rarely necessary, but so long as abdominal pain remains, the abstraction of blood locally, by leeches or cupping, will be beneficial; repeated blistering over the abdomen should also be resorted to, or the tartar emetic ointment, (No. 15,) may be used; renewing the application as soon as the pustular eruption begins to dry up. A grain of opium and two grains of ipecacuan, formed into a pill, may be taken night and morning; and if the liver be in a torpid state, and there be a deficiency of bile as indicated by whitish clay-coloured stools, mild mercurial medicine should be combined with opiates.

No. 187.

Mercury, with chalk, three grains,
Dover's powder, eight grains. Mix.

No. 188.

Blue pill, three grains,
Opium, one grain,
Ipecacuan, one grain. Mix, and form into a pill.

Either of these to be taken night and morning, and occasionally a gentle purge of castor-oil, magnesia and rhubarb, or confection of senna with cream of tartar. The combination of nitric acid and opium is extremely useful in many cases of Dysentery, and may be employed if the above prescriptions have failed.

No. 189.

Diluted nitric acid, half an ounce,
Laudanum, a drachm,
Water, a pint. Two tablespoonfuls as a dose, three or four times in twenty-four hours.

When the discharge continues, and the strength is at the same time failing, tonic medicines are to be taken.

No. 190.

Peruvian bark, (cinchona,) and
Gentian-root, of each, half an ounce,
Rhubarb-root, two drachms,
Water, two pints; to be boiled for half an hour, and strained through fine linen.

A tablespoonful or two of this infusion to be taken twice or three times a day, while the powder is continued night and morning. The sulphate of zinc is also a very valuable tonic and astringent.

No. 191.

Sulphate of zinc, twelve grains,
Extract of gentian, two scruples,
Opium, two grains. Mix, with syrup or mucilage, and divide into twelve pills. One to be taken twice a day or oftener, with half a wineglassful of the decoction of bark.

But the remedy of this class, from which we have derived the greatest advantage, is the sulphate of copper or blue vitriol, which has been used in the southern states of America upwards of half a century, in the chronic form of the disease.

No. 192.

Sulphate of copper, six grains,
Opium, four grains. To be made into twelve pills, with crumb of bread and mucilage. One, two, or three to be taken daily; increasing the number gradually, or augmenting the quantity of the sulphate in each.

It is not to be supposed, however, that this or any other medicine will have the effect of curing long-continued and extensive ulceration of the inner surface of the bowels. Medical men in inter-tropical countries know well the hopeless nature of these cases; they are aware, that while numerous ulcers are healing at one part of the intestinal canal, others are carrying on their ravages at another portion of it, and that at the same time all the coats of the diseased parts are becoming thickened, and the diameter of the bowel contracted. We have seen the walls of the colon or great gut at least a quarter of an inch thick in several instances, and of the consistence of gristle. Cases however have occurred, in which, under the judicious use of medicine, change of air, and a well-regulated diet, the ulcers, when not very extensive or long continued, have healed; and this has been inferred from the cicatrices found in the intestines of those who, having been cured of chronic Dysentery, have afterwards died from other diseases.

It must be remembered that the powerful astringent remedies above prescribed, so far from being serviceable, will prove in-

jurious if given while inflammatory action of the mucous membrane still exists, which will be known by abdominal pain, increased on pressure, with straining and griping at stool: it is only in those cases where the inflammation has been subdued and a debilitating discharge from the bowels continues, that the sulphate of copper or zinc should be administered. Injections are not to be forgotten during the treatment: these may consist of a weak infusion of ipecacuan-root twice a day, or of linseed-tea or barley water; and if there be much straining, a few drops of laudanum may be added. From half a drachm to a drachm of chloride of lime in barley water, or in the ipecacuan infusion, forms an excellent enema in many cases of acute as well as chronic Dysentery.

It is absolutely necessary in this disease, but more especially in the chronic form, that the warm or rather tepid bath should be frequently used, in order to keep the skin clean, and correct as much as possible the peculiar odour that emanates from it, which would otherwise become intolerable to the patient's attendants.

With regard to regimen, the patient must be particularly guarded, for medicine can be but of little avail, if he be induced to satisfy those morbid cravings which are so frequently a symptom of this form of the disease. The diet should be mild, easy of digestion, and unstimulating, being chiefly composed of farinaceous substances, as rice, bread, sago, arrow-root, &c., with milk. The drink also must be mild and demulcent, unless in cases attended with much debility; and, where there are no inflammatory symptoms, port wine, in moderation, may then be allowed, with water, or in thin arrow-root, which is perhaps the best method of taking it; and those who have been in the habit of using spirits may take weak brandy and water.

INFLAMMATION OF THE EAR.

Inflammation of the Ear is confined to the lining membrane of the tube which leads to the *tympanum* or drum of the ear, or it may be situated beyond the drum, in the deeply seated parts of the internal ear. In the former case the affection is commonly

called *ear-ache*, which though accompanied with acute pain and other unpleasant symptoms, is unattended with danger; in the latter the inflammation is sometimes very severe, and runs on to suppuration and subsequent destruction of the lining membrane, small bones, and other parts of the structure of the internal ear.

Common ear-ache, which is generally the result of exposure to a current of air, is attended with ringing or buzzing noises, and impaired hearing, and when the pain is very severe there are slight feverish symptoms; but it seldom lasts beyond two or three days, and usually terminates without any discharge of matter from the ear, though sometimes matter exudes from the lining membrane of the passage leading to the drum, during several days or weeks, and ceases gradually, without leaving deafness or any other bad effect.

Deep-seated Inflammation of the Ear is a disorder of a more serious character; in this case the pain is very acute, and the sensation of tension and heat in the ear, accompanied with ringing, clanging, whistling, and various other sounds, is very distressing to the patient; and the slightest noise or movement of the ear is almost intolerable. There is always more or less deafness; the pain extends to the face and side of the head, and frequently the head-ache is intense. The skin is hot, the pulse quick and hard, and the appetite gone; there is likewise thirst, restlessness, sometimes delirium during the night, and in a word the usual symptoms of inflammatory fever. The inflammation may reach its height in the course of two or three days, and then all the symptoms abate gradually, or it may terminate in the formation of matter, which bursts the drum of the ear, and finds vent externally. The discharge gives the patient great relief, and in favourable cases the running from the ear gradually subsides, and the ulcerated drum is restored to a healthy state; but this favourable termination does not always take place; in more severe cases the drum is entirely destroyed, and the lining membrane of the internal part of the ear becomes extensively ulcerated, the matter acquires a strong and exceedingly disagreeable smell, the small bones of the ear are detached and carried off along with the matter, thus causing permanent deafness. Portions of the bony structure of the internal ear become carious or

rotten, and disorganization may go on during several months or longer, until at length the brain and its membranes become affected, and death ensues.

There is still another species of ear-ache, which comes on suddenly at regular or irregular intervals, without occasioning constitutional excitement: this form of the affection is purely nervous.

Serofulous children are most subject to ear-ache, and it frequently follows scarlet fever, measles, small-pox, &c. One of the most common causes is exposure of the head to currents of air, and it is not unfrequently brought on in children by hardened wax or foreign bodies in the ear, as peas, cherry-stones, worms, insects, &c., and the injurious habit of picking the ears, is a very common cause of this painful disorder.

TREATMENT. In ordinary cases of ear-ache the treatment consists in the frequent application of warm fomentations of the decoction of linseed or marshmallow, and poultices of linseed meal during the night; in opening the bowels freely by means of calomel and jalap, and in filling the ear with cotton wetted with laudanum and almond-oil in equal proportions. If the affection be not relieved by these means, a more active plan of treatment must be adopted. Five or six leeches are to be applied behind the ear every six or eight hours; and in the event of the general inflammatory symptoms running high, it will be advisable to take blood from the arm. The abstraction of blood may be followed, if necessary, by the application of a blister to the nape of the neck. In addition to this treatment, the mixture of tartar emetic with nitre, (page 76, No. 55,) in doses suited to the age of the patient and severity of the inflammation, may be given in order to moderate the constitutional excitement; and the bowels should be kept freely open by saline purgatives.

The most active treatment sometimes fails in preventing suppuration, and the discharge of fetid matter often continues for months, or even many years, in spite of every means used to check it. As soon as the matter which has been pent up in the cavity of the drum makes its exit, the constitutional symptoms cease, and the pain abates: all that can be done afterwards is to prevent the matter from remaining in the deep-seated cavities of

the ear until it become acrid and irritating; to obviate this, warm water or milk and water should be frequently injected, with the intention of removing the offending matter. Cleansing the ear in this manner gives great relief to the patient, and in some cases is sufficient to allow the lining membrane of the ear to recover its natural state, but in others the discharge continues, becomes chronic, and requires astringent injections.

No. 193.

Sulphate of zinc, (white vitriol,) six grains,
Rose-water, twelve ounces. Mix.

No. 194.

Goulard's water, and
Rose water, of each half a pint. Mix.

A little of either of these lotions (tepid) is to be gently injected into the ear three or four times a day, and their strength should be gradually increased. A seton placed in the nape of the neck, or the repeated application of blisters behind the ear, may be found serviceable in protracted cases. Change of air, regular exercise, sea-bathing, a mild dry diet, abstinence, as much as possible, from all kinds of liquids, and the use of tonic remedies to restore the general health, are the means indicated in all cases of long-continued running from the ear. The most suitable tonics are quinine and preparations of iron, and the decoction of sarsaparilla has been found serviceable in many cases.

Laudanum dropped into the ear frequently relieves *nervous ear-ache*, and a return of the affection may be prevented by attending to the state of the bowels, and taking quinine or carbonate of iron, in small doses, twice or thrice a day, during three weeks or a month.

EFFERVESCENT DRAUGHTS.

Effervescent Draughts are much used in fevers and inflammatory diseases, in order to quench thirst, check vomiting, moderate the heat of the surface of the body, and cause gentle perspiration: the one generally used is made as follows.

No. 195.

Take of subcarbonate of potash, or of soda, a scruple,
Syrup of orange peel, a drachm. Mix, in a wineglassful of water, and
then add a tablespoonful of lemon juice, or fifteen grains of citric or tartaric
acid, in powder, dissolved in a little water.

The above may be swallowed while in a state of effervescence, or the alkaline solution may be first taken, and the acid immediately afterwards, so that the effervescence may take place in the stomach. In fever it is a common practice to add five grains of *nitre* to this draught, with the intention of increasing the determination to the skin.

A mild and agreeable effervescent purgative draught is made from the patent *Seidlitz powders*. These consist of two different powders; the one contained in a white paper consists of two drachms of *tartarized soda*, (*Rochelle salt*,) and two scruples of *carbonate of soda*; that in the blue paper, of thirty-five grains of *tartaric* or *citric acid*. The contents of the white paper are to be dissolved in half a pint of spring water, to which those of the blue paper are to be added. The draught is to be taken in a state of effervescence.

ELATERIUM.

Elaterium, or the dried juice of the *wild cucumber*, is the most powerful of all purgative remedies. It is principally used in dropsy, from the action it possesses of discharging through the bowels the water which has accumulated in the cavities of the body, or in the cellular substance under the skin. (See *Dropsy*.) Elaterium was used by the older physicians, but fell into disrepute on account of the supposed irregularity of its action. Dr. Ferrier, of Manchester, brought this medicine again into notice; and it is now well ascertained that, when properly prepared, its action is as regular and certain as that of any other remedy. The dose is the eighth or the quarter of a grain, twice or thrice in twenty-four hours, which should be continued until copious evacuations are procured. In dropsy it is frequently used in the following form.

No. 196.

Take of the extract of elaterium, one grain,
Sweet spirits of nitre, two ounces,
Tincture of squills, and
Oxymel of colchicum, (or meadow saffron,) of each half an ounce,
Syrup of buckthorn, an ounce. Mix. The dose is a teaspoonful three or
four times a day.

It has been used with advantage in gout and acute rheumatism, in combination with other purgatives, as follows.

No. 197.

Take of the extract of elaterium, ten grains,
Compound extract of colocynth, two drachms,
Jalap, and
Castile soap, of each a drachm,
Oil of juniper, a sufficient quantity to make a mass, to be divided into fifty
pills : two or three a dose.

EPILEPSY, OR FALLING SICKNESS.

Epilepsy has been known from the earliest ages, and was minutely described by Hippocrates. Its sudden manner of attack, and alarming symptoms, caused this frightful disease to be considered, in remote times, when ignorance and superstition prevailed, as an indication of the displeasure of the gods; hence, when a person in the Roman forum, or in any of the popular assemblies, fell down in an epileptic fit, the meeting was immediately broken up. Though Epilepsy be no longer looked upon as a *morbus sacer*, nor attributed to the agency of evil spirits, and though no superstitious ideas regarding it now exist, yet our knowledge of its cause, seat, and treatment, is still confined within very narrow limits, and but little in advance of the Greek and Roman authors.

In the great majority of cases the fits of Epilepsy come on without any previous indication of their approach; but sometimes the following premonitory symptoms are experienced. Head-ache, giddiness, ringing in the ears, flushed face, low spirits, irritability of temper, the fancied appearance of certain objects before the eyes, and in some cases dilatation of the

pupils, announce the approach of an attack. These sensations continue some time, perhaps a day or two, before the fit comes on; but in other patients the warning symptoms are of short duration, and of a different description. A feeling of pain, heat, cold, or tingling, comes on suddenly, in one of the toes or fingers, or in a particular part of the back or belly, then rises gradually through the stomach and heart, until it reach the head, when the patient immediately falls to the ground, as if struck with lightning. But, in ordinary cases, at the moment when the patient least expects it, perhaps when conversing with his friends at table, he utters a loud unnatural scream, and falls down bereft of sense and voluntary motion, and violent convulsions instantly follow. In some cases, however, the convulsive movements precede the fall; particular motions or gesticulations of the limbs take place, or the head is drawn backwards or turned gradually round towards one of the shoulders, by a spasmodic action of the muscles of the neck, which appears very distressing; but in general, the piercing shriek, the fall, and the convulsive movements, follow each other with the rapidity of lightning. The muscles of the trunk and extremities of the body are violently agitated, and the patient is severely shaken; the limbs are alternately extended and flexed, the toes are curved inwards, the thumbs are firmly grasped in the palms of the hands, and it has been remarked that, in many cases, the muscles of one side of the body are more severely convulsed than those of the other. The convulsive action of the muscles of respiration causes the breathing to be at first slow and difficult, but after some time it becomes quick, irregular, and occasionally stertorous. The muscles of the belly and the bladder are acted on in a similar manner, so that in some patients the faeces and urine are expelled involuntarily. The face is swollen and red, or of a purple colour; the veins of the temples and neck are enlarged; the face is drawn to the right or to the left, or the head may be drawn backwards or downwards on the chest. Sometimes the eyelids are closed, at other times wide open; the eyes are fixed and staring, or they roll in their orbits, the pupils remaining dilated or contracted, but always immovable. The face is violently distorted, the patient gnashes his teeth, and thrusts out

his tongue, which is often severely injured; foam flows from the mouth, and is not unfrequently bloody, from the wounds inflicted on the tongue. The action of the heart is strong, tumultuous, and irregular; and the pulse is quick, small, and at times scarcely perceptible.

It seldom happens that the attack continues longer than a few minutes, but in some cases the patient becomes immovable for a short time, and is again suddenly convulsed: sometimes a series of attacks and remissions follow each other in this manner during half an hour, an hour, or even considerably longer. In general, however, the convulsions gradually cease; perspiration breaks out on the forehead, neck, and breast; the breathing becomes natural, and is occasionally attended with sighing; the face loses its livid colour, and appears pale. The patient now remains for some time in a sort of stupor, and is then restored to a slight degree of consciousness; he appears very drowsy and overcome with fatigue, and soon falls into a deep sleep. While in this state, the perspiration breaks out freely over the whole body, the breathing becomes natural, the pulse full, soft, and slow; and after sleeping profoundly during several hours, he awakes slowly, without retaining the slightest recollection of what has taken place. He may recover his senses immediately on awaking, but in most cases the power of voluntary motion, sensation, and consciousness, return slowly, and a feeling of languor, weakness, and weight, or oppression in the head, with pain, or a sensation of soreness about the chest and limbs, is experienced for some time after.

Epilepsy often appears in a much milder form than that just described, and is even sometimes so slight as to escape observation. Instead of the frightful symptoms attending the more severe degrees of the disorder, many patients merely experience a sensation of faintness, spasms of some of the muscles of the face, loss of consciousness during a few seconds or a minute or two, and then immediately recover the full exercise of their mental faculties, and continue the conversation or occupation in which they were engaged, without being aware that it had been interrupted. In other cases the muscles of the body appear relaxed, without the slightest spasmotic movement; the patient

heaves a sigh, the pupils of the eyes appear dilated, and these symptoms, with loss of consciousness for a few seconds, constitute an attack.

Epilepsy of all grades and forms takes place as frequently when the patient is asleep as when awake; in the former case, on awaking, he feels an extreme degree of fatigue, accompanied with an uneasy sensation of the limbs, which makes him well aware of the state he has been in.

Epileptic fits recur at very irregular intervals; at first a month or two, or even twelve months elapse between the seizures; but as the disease becomes confirmed, they take place more frequently, and at length may occur daily. In some patients the oftener the fits come on, the less severe they are; in others, the reverse of this is the case.

When the fits recur frequently, and the complaint has been of long continuance, the memory fails, the intellect becomes impaired, the countenance assumes a vacant appearance peculiar to epileptic patients, and at last a state of idiocy is induced; but when the attacks appear at long intervals, without being immoderately severe, their influence on the general health and intellect is scarcely, if at all, perceptible. In fact, when confined within due bounds, Epilepsy is not incompatible with the development of the most powerful intellect. Many celebrated men, of all ages, military, political, and literary, have been affected with this disease; Julius Cæsar, Mahomet, Petrarch, Rousseau, and Bonaparte, were epileptic.

CAUSES. Children are certainly more liable to Epilepsy than adults; but the assertion, so frequently made, that women are more subject to it than men, wants confirmation. Although well-formed individuals, apparently in good health, have become epileptic, yet observation has shown that a great number of patients with this disease have been born with an imperfect formation of the brain. Idiots, and people of weak minds, are very subject to Epilepsy. The hereditary influence of this disease is generally admitted; and it appears to be well understood that people of serofulous habit of body labour under it more frequently than others. It is said to be more common in the lower, than in the middle and upper classes of society.

The most frequent exciting cause is terror or sudden fright:

for example, how often it happens that a nurse makes a sudden noise behind a child in order to stop hiccup, and that the infant, in consequence, falls instantly into a fit of Epilepsy, which recurs from time to time throughout life. Sudden fits of passion, disappointment, distress of mind, and excess in venery, are the causes which rank next to terror in producing this disease.

The irritation of the brain, which causes Epilepsy, is sometimes sympathetic of a disordered state of the skin, stomach, womb, kidneys, and more particularly of irritation of the bowels, produced by worms. Small tumours in the course of the nerves, or scrofulous tumours in the brain, have also been known to bring it on.

TREATMENT. Little more can be done during a fit of Epilepsy, than to prevent the patient from hurting himself. When the tongue is thrust out and fixed between the jaws, it ought, of course, to be carefully returned, and then a napkin or handkerchief firmly rolled up, or a piece of Indian rubber, placed between the teeth. The head and shoulders should be raised, and the dress loosened, particularly the neckcloth or stays. The forehead and hands ought to be sprinkled with cold water, and the struggles of the patient restrained as much as possible. If there be much determination of blood to the head, it may be necessary to open a vein at the arm, in order to prevent a fit of apoplexy: this step, however, is seldom required, and not easily accomplished, on account of the convulsive movements of the patient. The safest means of relieving congestion of blood in the brain, is by pouring cold water on the head, and this may be resorted to with advantage in every case in which the head is hot and the pulsation of the carotid arteries strong. Putting common salt in the mouth has been of service in some cases; and placing a piece of cold metal in the hands, or a large key between the shoulders, is stated, by Joseph Frank, to have had the effect, in some instances, of arresting the fits. When the fits are preceded by *aura epileptica*, or the peculiar sensation above alluded to, of a cold fluid rising from the toes or fingers to the head, a ligature firmly applied round the extremities, sometimes wards off the attacks; indeed, some epileptic people wear ligatures on the limbs constantly for this purpose. It is improper to apply aromatic vinegar, sal volatile, or other pungent

substances to the nostrils, and no attempt should be made to make the patient swallow.

It is only during the intervals of the fits that a radical cure can be attempted. Our efforts to effect this should be directed to remove the irritation of distant organs, or parts on which the disease may depend; and treatment conducted on this principle is more rational, and more likely to be attended with permanent success, than if purely specific, or, in other words, intended to act directly on the disease itself.

When there are symptoms indicating an undue determination of blood to the head, or a diseased action in the brain, the patient, if plethoric, should be bled from the arm, or cupping at the nape of the neck, may be frequently resorted to. The head ought to be shaven and bathed daily, or twice a day, with cold water, and a seton kept in the back of the neck, may be attended with the greatest benefit. To this treatment should be added low diet, and the frequent use of purgative remedies.

If Epilepsy be caused or kept up from irritation produced by worms in the bowels, *spirits of turpentine*, in half-ounce doses, or other remedies possessed of the power of destroying or carrying them off, should be administered. If it arise from teething, the gums should be freely scarified, and the bowels carefully attended to. (See *Teething*.) If from imperfect or painful menstruation, the warm hip-bath, aloetic purges, and the tincture of steel, are the proper remedies. If it depend on a disordered state of the stomach, liver, or other organs, the object is to restore them to a healthy state; but for the means of attaining such object, we must refer our readers to the different parts of this work, in which they are particularly noticed.

It happens very often, however, that the state of the brain and nervous system, which gives rise to Epilepsy, cannot be traced to functional derangement or irritation of distant organs, and in such cases a variety of remedies have been resorted to, without any other reason being assigned for their use, than that they have sometimes been found serviceable.

The *oxide of zinc* ranks among the first of these supposed specific remedies, and was highly spoken of by a late celebrated German physician, Hufeland.

No. 198.

Oxide of zinc, half a drachm,

Extract of liquorice, a sufficient quantity to make sixty pills, of which two are to be taken as a dose, night and morning, increasing the quantity every two days, by the addition of a pill.

No. 199.

Oxide of zinc, and

Extract of henbane, of each a grain,

Powder of valerian-root, half a drachm. Mix. To be taken as a dose night and morning. (In obstinate cases, half a grain of ammoniated copper may be added to each dose.)

These pills are to be continued regularly, until the patient complain of sickness at stomach, and then the dose, instead of being increased, should be gradually diminished. This remedy may be given with perfect safety, to the extent of ten to twenty grains daily. When the disease is confirmed, and recurs frequently, the *oxide of zinc* may be continued every day during six months, or even a year; but when milder, this medicine need not be given longer than fifteen days of every month.

A remedy, much used of late years, and which has been strongly recommended, is the *nitrate of silver*, or *lunar caustic*, in small doses; but it has been clearly shown, that unless continued regularly, during several months, or even longer, it produces no good effect, and then it has frequently caused a purple or slate-coloured appearance of the skin, which has continued throughout life; and it also appears, that whatever good effect it has produced, has been at the expense of the lining membrane of the stomach and bowels, which has not unfrequently been found, after death, inflamed, ulcerated, or even perforated.

To enumerate all the various remedies which have been employed in this disease, would be attended with no advantage, since there are none on which so much reliance can be placed as on well-directed *regimen*. The diet, in all cases, should be mild and sparing; and wine, and every kind of stimulating drink, entirely abstained from. In full-blooded individuals, animal food must be completely given up; but those who are thin and pale may be allowed a moderate quantity of chicken or tender mutton or beef once a day; care, however, must be taken, not to

embarrass the stomach with a greater quantity of food, though even of the mildest description, than can be easily digested. There ought to be fixed hours for meals, and the intervals between them should not be too long. Strong tea and coffee are improper, and not more than a teacupful of any kind of drink should be taken at a time. Regular exercise, *on foot*, is of the greatest service, but the patient must avoid fatiguing himself by walking too far at one time, nor should exercise be taken too soon after meals. Early rising, and a moderate indulgence in sleep, are as beneficial as the opposite conditions would be injurious. Sleep should never be prolonged beyond seven hours. Epileptic patients must avoid going into close rooms, theatres, and other crowded places of public amusement, and they will find the pure air and tranquillity of a country life more suitable than the noise and bustle of a large town. Wearing flannel next the skin, and worsted stockings, are indispensable. The tepid bath should be used frequently, and while in the bath the head should be kept cool, by the application of towels dipped in cold water. The hair ought to be closely cut, and the head bathed regularly every morning with cold water, or the shower bath may be used, if it otherwise agree with the patient.

Every means should be adopted to keep the mind cheerful, and all strong mental emotions are to be particularly guarded against.

When the attacks are of frequent occurrence, the patient must be carefully watched, and a piece of Indian rubber, or a wedge-shaped piece of soft wood, should be always ready to place between the teeth, in order to prevent him from biting his tongue. It is scarcely necessary to mention, that he ought to avoid all dangerous situations; such as going near the edge of a precipice, sitting on the top of a coach, &c., and not walk near water, nor sit near the fire, unless it be completely protected by a strong wire fire-screen. An indulgence in certain pleasures might prove fatal to an epileptic person; we would, therefore, say to him, in the words of an old poet,

VIS FIERI FORTIS?

NOLI SUCCUMBERE SCORTIS.

EPSOM SALT, or Sulphate of Magnesia.

Epsom Salt is a well-known and very excellent purgative. In the dose of from two teaspoonfuls to an ounce, dissolved in half a pint of warm water, and taken when tepid, it acts freely, without griping. To prevent this salt from causing sickness at stomach, it may be taken in an infusion of orange-peel, or in any other aromatic or bitter infusion, to which two teaspoonfuls of *tincture of rhubarb* may be added. It quickens considerably the action of the *infusion of senna leaves*; hence it is frequently given in the form of the *black draught*.

Epsom Salt is one of the principal ingredients in several of the mineral waters, particularly in those of Epsom, Seydschutz, in Bohemia, Cheltenham, Kilburn, Scarborough, &c.

Oxalic acid has a strong resemblance to Epsom Salt, and has frequently been mistaken for it; the former, however, may easily be known by its acid taste, when mixed with water, and by changing the colour of blue paper to red. The antidotes against oxalic acid are powdered chalk or magnesia, followed by hot brandy and water, with small doses of laudanum.

ERGOT OF RYE, (*Secale Cornutum.*)

This is generally supposed to be a parasitic plant, growing on the ear of the rye, barley, and wheat; but some distinguished botanists are of opinion that it is a disease of the grain itself, arising, probably, from the puncture of an insect. The Ergot of Rye, though a powerful poison, is at present much used in medicine, and constitutes, under certain circumstances, the most valuable remedy we possess. We are indebted, in a great measure, to the medical men of the United States of America for ascertaining its properties, and introducing it into general practice.

This substance is principally used during labour, in order to assist in expelling the child; and there can be no doubt that it exerts a strong influence over the womb, when given in suitable doses, and in the cases in which its use is indicated; under other circumstances it would produce the very worst effects, and is only, therefore, of value in the hands of the experienced accoucheur.

The Ergot of Rye is now well ascertained to be one of the most efficacious remedies in arresting the alarming discharges of blood from the womb, commonly called *floodings*, and also in checking excessive menstruation. Some practitioners place great confidence in it, in every kind of haemorrhage or discharge of blood from any part of the system; but further evidence is wanting, in order to establish its beneficial action in such cases. It is also considered to be advantageous in gonorrhœa, the whites, and in all mucous discharges; but its most certain property is the power which it possesses of causing the womb to contract, and thereby expelling the child, and also the after-birth, in cases where it has been too long retained.

The average dose of the Ergot, in powder, during labour, is twenty-four grains, in a little water, or with the addition of a glass of sherry wine, which enables it to sit easier on the stomach; and it may be necessary to repeat the dose three or four times, at intervals of two or three hours. In cases of flooding, a drachm may be divided into six or eight doses, and given at longer or shorter intervals, according to the circumstances of the case. In whites, and other mucous discharges, the dose is from five to ten grains, three or four times a day; or twenty grains may be boiled, in eight ounces of water, and taken in the course of two days. The *tincture* is made by macerating two ounces of the Ergot in a pint of proof spirit, for ten days: the dose, in cases of tedious labour or flooding, is two or three teaspoonfuls every twenty minutes. The *infusion*, in common use, is made with half a drachm of the Ergot to half a pint of boiling water, and one half administered at a time.

The Ergot of Rye must be kept in a dry place; if exposed to moisture it becomes useless: the greater part of that found in the shops is completely inert.

ERYSIPelas, ROSE, OR ST. ANTHONY'S FIRE.

Erysipelas is a peculiar inflammation of the skin, attended with fever, and frequently accompanied by elevations of the scarf-skin, resembling blisters. This disease presents a great many varieties, according to its severity, and the part of the body which it may occupy. Sometimes it is a mild disorder, confined to a

small portion of the skin, (*simple Erysipelas*); sometimes the inflammation extends deeper than the skin, and involves the structures beneath it, (*phlegmonous Erysipelas*); while, in other cases the inflammation attacks the face, extends to the head, and is attended with very great danger to life.

Simple Erysipelas is generally ushered in by febrile symptoms, such as shivering, head-ache, hot skin, quick pulse, sickness at stomach, or vomiting; pains about the loins and lassitude; but many of these symptoms are absent when the disease is to be very mild in its nature. In the part which is about to be attacked, the patient often experiences a feeling of heat, itching, or weight. On the second or third day the inflammation of the skin makes its appearance, and is attended with the ordinary signs of inflammation, viz. redness, heat, pain, and a certain degree of swelling. The colour of the inflamed part is commonly deep rose, of a shining aspect, and soon spreads uniformly over the surface; it disappears under pressure made by the finger, and immediately returns again when the pressure is removed; the pain is of a pungent, burning kind, and is often attended with itching, or a pricking sensation; it extends all over the inflamed surface; the swelling is not considerable, unless the disease be very severe; it is uniformly spread over the inflamed part, and is more easily detected by the finger than by the eye. About the third or fourth day, blisters of various sizes sometimes appear on the inflamed skin, but in other cases the inflammatory symptoms begin to subside on the fourth and fifth days, and soon terminate, without any accident, in a separation of the scarf-skin or cuticle, from the true skin underneath.

Phlegmonous Erysipelas is a more severe form of the complaint, which attacks the structures underneath the skin, as well as the skin itself. It generally occurs in young, strong persons, and affects the limbs more frequently than any other part of the body. In phlegmonous Erysipelas the fever is much more violent, and the pain more severe, than in the former species; the swelling of the inflamed parts is more manifest, harder, and does not gradually disappear in the surrounding skin, but has more the feel of a tumour. When the disease has continued for four or five days, it may subside and disappear, as in cases of *simple Erysipelas*; but it more frequently happens, that while the

fever diminishes with the local pain and redness, the swelling of the part does not diminish in proportion; it becomes soft, continues to retain the impression of the finger, and in a few days matter is formed between the muscles and underneath the skin. In still more severe cases, the matter extends along the cellular tissue, in the direction of the muscles, and destroys the adjacent parts, which are discharged in dirty-looking shreds of mortified substance, mixed with pus; and this discharge may continue for weeks, until it completely exhausts the patient.

Simple Erysipelas usually terminates on the third or fourth day; when blisters form, it may continue for eight, ten, or even fifteen days; and in cases of a severe kind, where matter forms, or the parts become mortified, the disease may last for several months. Erysipelas is commonly a mild disease, and terminates without any accident; but when attended by copious discharge of matter, or mortification of the cellular substance, it often ends in death. There is also much danger to be apprehended when it suddenly leaves any part (as the face, scalp, &c.) to attack the brain; or when it occurs in old persons, of broken-down constitution, in drunkards, &c., or after severe injuries.

Erysipelas, as we have said, may attack any part of the body; but when it occurs on the face and scalp, it is of sufficient importance to deserve a separate notice, on account of the danger of the disease extending to the brain. Dr. Tweedie, in the Cyclopaedia of Practical Medicine, states that "inflammation of the brain or its membranes almost invariably supervenes" on Erysipelas of the face or scalp; this is a most serious error, and if it were true, we should generally be compelled to condemn a person to death when attacked by Erysipelas of these parts; whereas, every body knows that, under judicious treatment, the disease admits of a cure in a very great majority of cases. Had Dr. Tweedie confined his remark to the Erysipelas of the scalp, which comes on after wounds or injuries, he would have been much nearer the truth. It is unnecessary to repeat our description of the local symptoms which attend Erysipelas of the face and scalp; we shall merely remark, that it is generally attended with severe fever, pain in the head, and slight delirium at night. When the disease extends to the membranes of the brain, the eyelids become swollen, and the eyes project; the vessels of the

head pulsate strongly: the patient complains of violent head-ache, and is highly delirious during the night: in the day he is drowsy, or the stupor is occasionally broken by fits of raving. As the inflammation of the brain advances, he sinks into a state of complete insensibility, and generally dies on the tenth or twelfth day of the disease.

CAUSES. Erysipelas is sometimes an epidemic malady, and prevails extensively in hospitals or crowded establishments. It frequently depends on some derangement of the digestive organs, a circumstance which is explained by the well-known sympathy between the skin and mucous lining membrane of the stomach and bowels; in other cases it is manifestly excited by some wound or injury of the skin: finally, Erysipelas prevails during the spring and autumn, and under certain conditions of the atmosphere, which favour its production.

TREATMENT. *Simple Erysipelas* generally yields to mild remedies. When it is confined to a small portion of the skin, nothing more will be required than to keep the part perfectly quiet, and administer any mild purgative medicine once a day. But if the inflammation run high, and be attended with some fever, it will be necessary to commence the treatment by giving an *emetic*, and then acting upon the bowels by smart *purgatives*. One or two of the pills already directed, (see No. 102, page 167, or No. 107, page 170,) will sufficiently answer this purpose. When the heat and tension of the skin are great, a few *leeches* may be applied to the swollen part, and warm fomentations afterwards used. When the Erysipelas has a tendency to spread from one part to another, great benefit will be derived by drawing a moistened piece of *lunar caustic* two or three times around the inflamed surface, so as to bound the part completely; the caustic, when used in this way, often excites a kind of inflammation in the healthy skin, which prevents the spreading of the erysipelatous affection.

Phlegmonous Erysipelas, or that species which extends to the deep parts underneath the skin, generally requires a more active treatment. When the febrile attack is severe, and the patient young or of vigorous constitution, blood should be drawn from the arm to the extent of sixteen or twenty ounces, particularly if the Erysipelas be seated in the face or scalp: sometimes it may

be necessary to repeat the bleeding, but this should only be done in cases of extreme danger, lest we reduce the patient's strength too much, and disable him from offering resistance to the suppuration or mortification which may afterwards come on. After the bleeding, an *emetic*, composed of twenty-four grains of *ipecacuanha*, should be given; and when the face or head are attacked, the same dose should be repeated thrice a day, until a decided impression is made on the disease; or constant nausea, with occasional vomiting, may be kept up, by the mixture directed at page 76. If the latter mixture do not act upon the bowels, they are to be freely opened by *calomel* and *jalap*, the extract of *coccygine*, (six to ten grains,) or any other strong purgative medicine. The patient should abstain entirely from animal food; his drink should be cooling, and gentle perspiration may be excited by adding twenty grains of *nitre*, and one quarter of a grain of *tartar emetic* to each pint of cold fluid which the patient drinks. Should any symptoms of inflammation of the brain come on, they must be immediately attacked in the manner already described. (See *Brain, Inflammation of.*) It must be well understood, that these active measures are only suited for the first stage of phlegmonous Erysipelas, when it occurs in strong and healthy persons. When the inflammation proceeds, in spite of treatment, and ends in the formation of matter, a different course is to be pursued; incisions are to be made with a knife into the diseased parts, so as to give free vent to the matter, and the flow of blood and pus should be promoted by warm fomentations or poultices. When the matter and shreds of mortified cellular substance have been thus freely discharged, and the parts show an inclination to heal up, (which may be known by the diminished quantity of the matter and the contraction of the wound,) the healing may be assisted by carefully bandaging the limb or part, so as to keep up an even pressure. During the latter part of the treatment, the patient's strength must be supported by a nourishing diet, porter, and even wine, when the vital powers are extremely exhausted. The form of Erysipelas which has been just described, often occurs in old people; in persons worn down by disease, in drunkards, and in those who have undergone privations of every kind. Notwithstanding the inflammatory nature of the disease, we must not employ blood-letting in cases

of this description : if the patient have been accustomed to drink, he must be allowed to take small quantities of his usual cordial ; the debilitated powers of the constitution are to be supported by a generous diet ; the bowels are to be kept regular, by administering six or eight grains of *jalap*, daily, with three or four of the *carbonate of ammonia*, or by the following draught.

No. 200.

Camphor mixture, four ounces,
Carbonate of ammonia, four grains,
Compound tincture of rhubarb, half an ounce.

Should the suppuration be very abundant, and mortification have proceeded to any extent, then a liberal use of the remedies recommended under the head of mortification, (see *Mortification*,) must be had recourse to. As a local application, in cases of this kind, we may employ a lotion composed of one drachm of *acetate of lead*, and one drachm of *carbonate of ammonia*, dissolved in a pint of water. Various other applications, such as flour, &c. have been recommended for Erysipelas, in all its stages ; but none seems to possess any greater efficacy than tepid water, applied with lint, covered by a piece of oiled silk.

MECHANISM OF THE EYE.

There is no piece of mechanism more beautiful or more curious than the eye, and to be unacquainted with its structure is to be ignorant of the most interesting formation which nature or art can offer to our observation. This inestimable organ is a delicate optical instrument, of perfect construction. It is composed of several parts, contained in a strong globular case or covering, called the *sclerotic coat*, which is of a texture so firm as to render it capable of resisting the roughest shocks. Immediately in front of the eye is placed a tough transparent membrane, of a circular form, fixed into the sclerotic coat, in a manner similar to that in which a watch-glass is fitted into its case. This membrane, from its horny consistence, is called the *cornea*; it occupies about two-fifths of the circumference of the eye-ball, and may be considered as the window of the eye. The front of the sclerotic coat and cornea is covered with a very sensitive membrane, called the

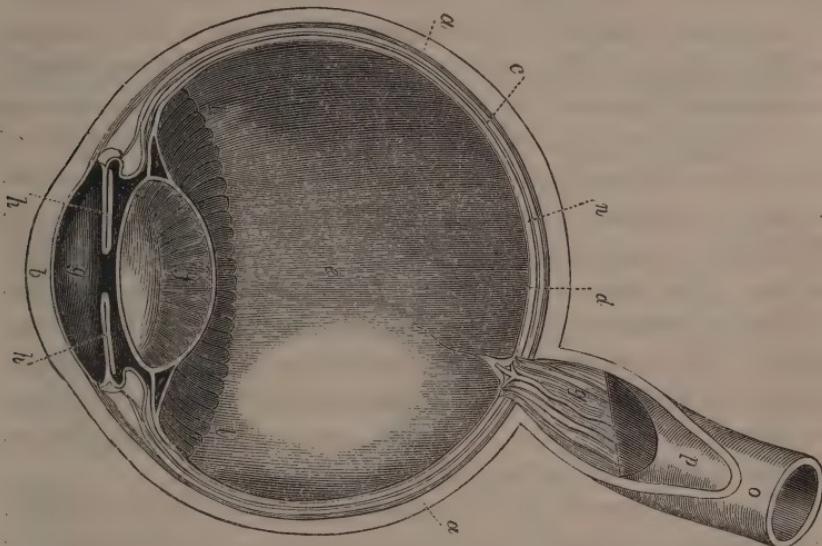
conjunctiva, which, from its great sensibility, serves as a constant monitor in protecting the eye. This delicate membrane is immediately irritated by the smallest particle of any foreign body that comes in contact with it, and thus causes the act of winking, which has the effect of sweeping the offending matter from its surface. The conjunctival membrane is a continuation of the skin which passes from the outer to the inner surface of the eyelids, and then covers the anterior part of the eye, thus serving to connect the eye-lids with the globe of the eye. The inner or concave surface of the sclerotic coat is lined by a thin delicate texture, composed of minute blood-vessels, and is called the *choroid* membrane, the use of which is to secrete a dark substance, resembling lamp-black, which covers the whole of its surface, and is evidently intended to prevent the light from passing into the eye by any other channel than the pupil, as well as to prevent the reflection of the light after it has entered. In persons of a delicate complexion, this dark-coloured pigment shines through the sclerotic coat, and gives a bluish tint to the white of the eye. The choroid membrane is continued on the sclerotic, as far forwards as the crystalline lens, where it forms a number of folds or plaitings, (*ciliary processes*,) which embrace the posterior half of the lens on all sides, and seem destined to retain that body in its situation.

The *retina* is a fine transparent membrane, consisting of exquisitely minute fibres, and forming a kind of web, which lies upon the surface of the choroid; it is formed by the optic nerve, which proceeds immediately from the brain, pierces the sclerotic and choroid coats, and then expands itself in a cup-like form upon the inner surface of the eye, as far as the cornea.

We shall now speak of the humours of the eye, the principal of which is called the *vitreous* humour, because it resembles melted glass. This substance is transparent, of the consistence of jelly, and forms about five-sixths of the entire bulk of the globe of the eye; it is divided into numerous small cells, by an exceedingly thin and transparent membrane, denominated the *hyaloid* membrane. This humour rests upon the retina, which embraces the whole of its posterior surface. The *lens*, or *crystalline* humour, so called from its brilliant transparency and resemblance to crystal, lies in a deep depression in the front of

the vitreous humour: like the other humours, it is transparent, and is possessed of great refracting power. The centre of the lens resembles soft wax in consistence, but it becomes gradually less dense towards its circumference. This body is formed of a great many thin layers, one within another, like the coats of an onion, the whole of which are enclosed in a delicate transparent capsule. A duplicate of the hyaloid membrane passes over the lens and its capsule, and thus serves to attach it to the vitreous humour. The aqueous humour is a limpid fluid like water, and is situated between the crystalline lens and the cornea: it is divided into two unequal portions, called the chambers of the eye, by a circular curtain, named the *iris*, which is seen through the transparent cornea. These chambers, the anterior of which is much the larger, communicate with each other by means of a round aperture in the centre of the iris, named the *pupil*. The aqueous humour possesses the singular property of

Fig. 1.



Section of the Globe of the Eye.

- a a The sclerotic coat.
- b The cornea.
- c The choroid coat or membrane.
- d The retina.
- e The vitreous humour.
- f The crystalline humour or lens.
- g The aqueous humour.

- h h The iris.
- i i Ciliary processes.
- n Space occupied by black pigment.
- o Sheath of optic nerve.
- p The optic nerve.
- q Central artery of the retina.

recruiting itself, when a portion has run out from a wound in the cornea.

The iris (*fig. 2*) is a round muscle, which floats freely in the aqueous humour, and is admirably constructed, in order to exclude all superfluous light; it contracts or expands, according to the degree of light, and thus diminishes or enlarges the size of the pupil or central opening. When the eyes are exposed to a strong light, the pupils contract, so as to prevent its entering in greater quantity than necessary; but, on the other hand, when the light is scanty, the pupils expand freely, in order to admit it. The iris is covered in front with a smooth shining membrane, and the sparkling or brilliancy of the eye is chiefly owing to the light being reflected by this polished surface. Inflammation destroys the glistening appearance and transparency of this membrane, and the eyes consequently assume a dull and heavy appearance. The posterior surface of the iris is supplied with a thick coating of the same dark-coloured substance which covers the choroid membrane; hence all the parts of the interior of the eye that are not perfectly transparent and intended for the transmission of light, are darkened with this peculiar pigment. The iris, however, is sometimes not furnished with this material, as in the individuals called Albinoes, in whom the eyes appear of a pink colour, like those of a white rabbit. All animals with this defective formation of the iris, are incapable of seeing in a strong light. The anterior surface or face of this curiously constructed curtain is differently tinted in different persons; hence, according to the prevailing colour, we say of the individual that he has black, blue, hazel, or grey eyes.

The eye is moved in all directions by means of six muscles, which raise it, lower it, turn it to the right or left, obliquely, or in a word, perform with the greatest rapidity all the various movements which the range of vision may require.

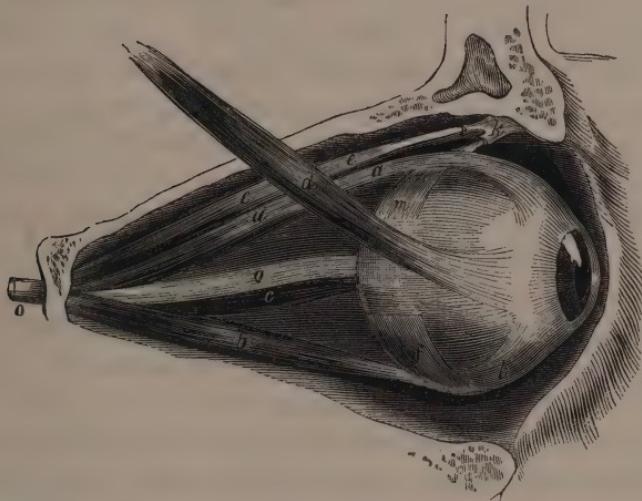
In order to allow the eyes to roll with freedom in their orbits, and that the eyelids may move easily over the delicate conjunctiva or outer covering of the eye-balls, without doing injury by friction, the eyes and the inner surface of the eye-lids are

Fig. 2.



constantly moistened with a watery fluid, secreted by the lachrymal gland, which is situated for this purpose at the upper,

Fig. 3.



Lateral view of the right Eye, seen from the outer side, with its muscles.

- aa* The superior straight muscle.
- bb* The inferior straight muscle.
- c* The internal straight muscle.
- d* The external straight muscle raised up, from its point of origin.
- ee* The superior oblique muscle, which

terminates in a rounded tendon, passing through the pulley at (*k*) and terminating on the eyeball at (*m.*)

- f* The inferior oblique muscle.
- oo* The optic nerve.

outer, and fore part of the orbit or cavity in which the eye is lodged. This fluid makes its exit from the gland by means of several small tubes, the mouths of which may be seen upon the inner surface of the upper eye-lid; and after lubricating the surface of the eyes, passes downwards to the inner corner of the eye, where it is received by two small canals, communicating with a duct called the *nasal duct*, which conveys it to the nose. When a particle of sand or any foreign body irritates the eye, or when the lachrymal gland is acted upon through the mind, a greater quantity of fluid is poured out than can be carried off by the nasal duct, and consequently the tears roll down the cheeks. When the nasal duct is obstructed, the fluid thus constantly thrown out by the lachrymal gland, instead of finding its way to the nose, trickles continually down the cheek, and is very distressing to the individual.

It would require much greater space than we can devote in a

work like the present, to give even a sketch of the admirable manner in which the eye, and the curious appendages connected with it, are fitted to perform their functions. The design displayed in adapting the eye to the light, in order to render objects visible to us, is truly wonderful.

The rays of light which proceed from objects fall first upon the convex surface of the cornea, then pass through the pupil, and are refracted in different degrees as they pass through the aqueous, crystalline, and vitreous humours; so that when they reach the bottom of the eye, they are collected in a point or focus on the retina, upon which they represent, with the most perfect accuracy, the various images of the objects from which they proceed. Hills, dales, rivers, woods, waterfalls, villages, and the numerous objects presented to the eyes in surveying an extensive landscape, are all delineated on the retina, which occupies a space not larger than a sixpence; and it is well worthy of remark, that though we see all these objects exactly as they are in nature, the picture formed by them is always painted upside-down upon the retina. The impressions of external objects are then conveyed by the optic nerve to the brain, and excite perceptions and ideas in it conformable to the picture thus portrayed on the retina. "The optic nerve," to borrow the graphic language of Sir D. Brewster, "is the channel by which the mind peruses the hand-writing of nature on the retina, and through which it transfers to that material tablet its decisions and its creations." Those who wish to pursue this interesting subject further, may peruse with advantage the excellent popular work by Mr. John Walker, of Manchester, entitled, "Philosophy of the Eye."

INFLAMMATION OF THE EYE.

The eye is subject to a great variety of affections, and several forms of inflammatory disease; it will, however, be necessary for us to mention only the most common disorders. These are acute and chronic inflammations of the eye, purulent inflammation, and finally, the low or scrofulous inflammation.

ACUTE INFLAMMATION OF THE EYE, or *acute ophthalmia*, (first form,) is easily recognised by the following symptoms: pain in the globe of the eye, with a sensation of sand or small particles

between the eye-lids; redness of the white of the eye, which is often of a bright scarlet colour, but occasionally presents a dull red tinge; head-ache, uneasiness on exposure to light; discharge of tears or of mucous fluid from the membrane which covers the eye and eye-lid, &c. These symptoms are not usually attended with any fever or disturbance of the general health; but when the inflammation runs very high, it may produce some febrile heat of skin and quickness of pulse. This is by far the most common disease of the eye in grown-up persons, and is generally caused by exposure of the face to cold and wet, by accidents, &c. It sometimes, also, prevails epidemically, and attacks numbers of people at the same time, and in the same place. The seat of this inflammation is the *conjunctiva*, or fine lining membrane of the eye-ball and eye-lids, which is continued over these parts from the skin.

Sometimes the inflammation attacks more deep-seated parts, (second form,) and then it is connected with the fibrous coat of the eye. This affection is not so readily detected as the former one, because the inflamed parts are more concealed from view; it may be known by the severe pain, augmented towards evening and during the night, and extending along the eyebrows to the temples or cheeks; by the dimness of sight which always accompanies it, and particularly by the band of inflamed vessels which run in straight lines towards the edge of the cornea, where they form a circle of a dull red or pinkish appearance. Both eyes are seldom attacked by this form at once, yet it is generally attended by some fever; dry, hot skin; furred tongue, derangement of the digestive organs, and disturbance of the general health.

In many cases of acute ophthalmia, the superficial and deep-seated structures of the eye are attacked at the same time, (third form;) the surface of the eye is red, from collection of blood in the vessels of the conjunctiva, and underneath them may be seen the circular band of pink vessels which surrounds the cornea, and has its seat in the sclerotic or fibrous coat of the eye-ball. This form of the disease is more severe than either of the preceding varieties, and often gives rise to an ulcer of the cornea, or, what is still worse, to a collection of matter in the substance of the cornea itself. It attacks old people much more frequently than adults or children.

Ophthalmia is often a mild disease, and easily checked by remedies; but sometimes the inflammation of the eye runs high, and continues for several days or weeks; hence a very great variety in the duration or degree of this affection in different cases. When the inflammation has been neglected from the commencement, or improperly treated, many bad effects are apt to follow. Thus the lining membrane of the eye-lids, (particularly the upper one,) may become rough, and by rubbing on the cornea, occasion a dulness of that part, which materially interferes with the clearness of sight. In other cases, when the deep-seated parts of the eye are affected, the inflammation extends to the cornea, an ulcer forms and heals up, leaving a dull spot, like a little cloud, behind it; or matter may form in the substance of the cornea, and the destruction of the internal parts go on until the eye-ball burst, the humours of the eye are discharged, and the power of vision is more or less completely destroyed.

TREATMENT. Acute ophthalmia is a purely inflammatory affection, which generally yields easily to proper remedies. In the *first form* of this disease, if the pain, redness, and febrile symptoms be severe, it may be necessary to apply *leeches* to the temples, or even draw twelve or sixteen ounces of blood from the arm; but, in a very great majority of cases, the following local treatment will be sufficient to relieve the symptoms, and speedily bring about a cure. Four grains of *nitrate of silver* (*lunar caustic,*) are to be dissolved in an ounce of spring water, or in rose-water; and a drop of this solution is to be applied two or three times a day, by means of a camel's-hair brush, to the surface of the eye. By this application the symptoms are usually relieved for a few hours, when they return again, and are again assuaged by the same means. During the day the following tepid eye-wash should be constantly applied over the eye-lids, by means of some lint or linen rag, completely covered by a piece of oiled silk.

No. 201.

Corrosive sublimate, one grain,
Muriate of ammonia, six grains,
Wine of opium, two drachms,
Water, eight ounces.

No. 202.

Corrosive sublimate, one half grain,
Vinous tincture of opium, one drachm,
Rose water, four ounces.

Or, instead of lotions, the eye-ball may be frequently syringed with a weak solution of *alum*, (two grains to the ounce,) or *vinegar* and water; at night the edges of the eye-lids are to be smeared with a small portion of *citrine ointment*, or the following *red precipitate ointment*.

No. 203.

Red precipitate, twelve grains,
Fresh butter, one ounce. Reduce the precipitate to a very fine powder, and mix it carefully with the butter.

Sometimes this ointment will produce a great deal of irritation, when the strength should be reduced by adding half an ounce of butter, or by diminishing the mercury to eight grains. At the commencement of the disease the bowels should be cleared out by two or three active purges; and, during the treatment, an occasional dose of *Epsom salts*, with the *liquor of the acetate of ammonia*, should be given, so as to produce two evacuations, at least, every day.

In the *second* and *third* varieties of Ophthalmia, where the deep-seated textures of the eye are involved, the treatment must be of a more active kind. The best practitioners advise the abstraction of blood (ten to twenty ounces) from the arm, according to the strength of the patient, and the severity of the disease. After general bleeding, it will be necessary to apply leeches to the temples, or over the eyebrows, and to repeat them two or three times, until the pain and inflammatory condition of the eye be manifestly relieved. Dr. Mackenzie and Mr. Lawrence both recommend the use of *calomel and opium*, after blood-letting. Four grains of calomel, with half a grain of opium, may be given every night, until the mouth is affected by the mercury; or, if the patient be not strong, five grains of *mercury and chalk*, with ten grains of *Dover's powder*, should be administered twice a day. To allay the distressing pain, the eye-ball may be frequently fomented with a warm decoction of poppy-heads; or, if no relief be obtained from this, the forehead and temples should be rubbed

with an ounce of warm *laudanum*, containing one drachm of the extract of *bella donna*. Laxative medicines must be given during the course of the disease, and a tendency to perspiration excited by warm drinks, and by placing the feet every night in a tub of warm water, rendered stimulant by some powdered mustard or ashes. To remove the conjunctival inflammation which accompanies the *third form* of ophthalmia, a solution of *nitrate of silver* (two or three grains to the ounce of water) should be dropped into the eye, once a day, and the *red precipitate* ointment is to be smeared along the edges of the eye-lids, at bed-time. We have already mentioned that, during the progress of acute ophthalmia, an ulcer may form on the cornea, or matter may be thrown out in its substance. Some surgeons advise us to evacuate this matter by the lancet, but it will be more prudent for persons who have not received a medical education, to leave the case to nature, which often effects a cure beyond our most sanguine expectations. The safest way of treating *ulcer* of the cornea, is to touch it once a day with a camel's hair pencil, moistened in a solution of *lunar caustic*, (six grains to the ounce of water.) The specks on the cornea, which frequently remain after the ulcer is healed up, often disappear of their own accord, but the process may be hastened by the use of a stimulating fluid, (two grains of *lunar caustic* to the ounce of water,) or by blowing into the eye with a quill, a small portion of a fine powder, composed of thirty grains of *red precipitate*, and half an ounce of white sugar.

PURULENT INFLAMMATION OF THE EYE. Under this head may be included the Egyptian ophthalmia, gonorrhœal ophthalmia, and the purulent ophthalmia of new-born children. The disease is essentially the same as the one which we have just described, differing from it only in being much more severe, and being excited by the application of some contagious matter to the eye-ball. The inflammatory symptoms in purulent ophthalmia are always violent; the inflammation soon extends over the lining membrane of the eye-lids, and terminates, within a very short time, in a copious discharge of yellow matter, (*pus*,) whence the name *purulent* ophthalmia is derived. The eye-lids soon begin to swell, in this form of the disease, and completely close over the eye-ball, so as to render it very difficult to examine the state of the eye. This is particularly the case in the purulent

ophthalmy of infants. From the rapid and severe nature of the inflammation, the membrane of the conjunctiva soon becomes thickened, and is raised up from the eye-ball by a net-work of vessels, distended with red blood, or spots of extravasated blood may be seen underneath the lining membrane of the eye. The secretion of purulent matter may go on for ten or fourteen days, or even longer, after which the discharge becomes more thin; the blood-red appearance of the eye-ball diminishes, the swollen state of the eye-lids gradually subsides, and with it the discharge of pus, until the disease at length entirely disappears: but, in many cases, the inflammation extends to the deep parts of the eye; the cornea bursts, and vision is not only lost, but the patient's countenance is disfigured, by the more or less complete destruction of the eye-ball, and closure of the eye-lid over it.

In the early stage of purulent ophthalmia, the constitution is not much disturbed; but we must not be deceived by this fallacious appearance; as the disease advances and extends to the deep parts of the eye, it is attended by severe pain in the eye-ball, coming on in paroxysms; frequent pulse, and loss of sleep at night; but the skin is seldom hot, nor do the general symptoms bear any proportion to the severity of the local disease.

Gonorrhœal Ophthalmia arises from the contact of gonorrhœal matter with the eye, and is exactly similar in its course and symptoms to common purulent inflammation of the organ. It is a very severe disease, and often destroys the sight, beyond recovery, within forty-eight hours. Out of fourteen cases related by Mr. Lawrence, complete loss of sight took place in nine; while, in the remaining five, the power of vision was partially injured by the consequences of deep-seated inflammation.

The purulent ophthalmia of infants is generally caused during the birth of the child, by the application to the infant's eye of some matter, which proceeds from the genital parts of its mother. About the third day after birth, the child's eye-lids are observed to be glued together by thick matter; soon afterwards yellow pus, in great quantities, flows from between the eye-lids, which are very much swollen, and of a bright red colour; the eyes are very sensible to light, and in order to avoid its irritation, the child keeps the eye-lids constantly shut, and offers the most obstinate resistance when we endeavour to separate them. As the disease

goes on, the whole surface of the eye is covered with a net-work of bright red vessels, concealed, however, by a thick coat of matter, and if active measures have not been adopted, the eye-ball bursts, or sight is very considerably damaged, within ten or twelve days.

TREATMENT. The principles of treatment for purulent ophthalmia, are the same as for severe Inflammation of the Eye; we shall, therefore, only add here, certain directions, which are rendered necessary by the peculiar nature of the inflammation. General and local blood-letting, the use of purgatives and sudorifics, as before described, (see page 289,) will serve to diminish the inflammation; but it can only be subdued by local treatment. A most important point is to clean away the yellow matter, frequently and completely, from the surface of the eye, by injecting with a syringe the tepid solution of *corrosive sublimate*, mentioned at page 288 and 289. Mr. Lawrence, and some other surgeons, recommend us to wash the eye-ball frequently with cold water, and to keep rags, dipped in ice-cold water, constantly over the eye; but the best lotion which can be used, is a solution of *lunar caustic*, (four grains in an ounce of water,) When the pain is considerable, the eyes must be frequently fomented with a warm decoction of poppy-heads, and the eye-lids may be prevented from sticking together by the use of *red precipitate* or *citrine* ointments. From the commencement of the disease, it will be proper to apply blisters behind the ears, or to the nape of the neck.

As there is some reason to believe that the purulent ophthalmia of infants is contracted from the application of certain matters to the eye during its birth, it will always be prudent to wash the child's eye carefully with tepid water, as soon as it is removed from the mother. In the very early stages of the disease, it may be necessary to apply one or two leeches to the temples; but most cases, unless they have gone too far before we see them, can be cured without blood-letting, by carefully cleaning the eye; by the constant use of the *lunar caustic* lotion, as above directed, by blisters behind the ears, and by occasional doses of castor oil, or calomel and rhubarb.

Scrofulous ophthalmia is a slow inflammation of the eye, which may continue for months or years, in persons of a scrofulous

constitution. It is generally attended by some change in the cornea, which injures the sight. The treatment must, in the first instance, be directed to the improvement of the general health, (see *Scrofula*.) When there is much pain, a few leeches may be applied to the temples, and irritation should be constantly kept up behind the ears, on the temples or neck, by means of blisters or the tartar emetic ointment, (see page 26, No. 15.) When the acute symptoms have been thus relieved, the *wine of opium* may be applied once a day to the eye, or a small portion (not larger than a split pea,) of the *red precipitate ointment*, (No. 203, page 289,) may be introduced daily between the lids, and then spread over the eye-ball, by gently rubbing the upper eye-lid over the surface of the eye.

Chronic ophthalmia. We have hitherto explained the mode of treatment which is adopted for cases of acute Inflammation of the Eye; but it often happens that after the acute symptoms have been subdued, the disease continues in a milder, yet obstinate form; this is termed *chronic ophthalmia*. The remedies most suited for this condition of the eye, are astringent or stimulating lotions, blisters, gentle purgatives, and when the constitution is weakened, mild tonic medicines. Various astringent lotions may be employed; the *wine of opium*, either pure, or reduced by adding one drachm of water to two drachms of the wine, is very generally used. The following lotions may also be used with advantage.

No. 204.

Powdered alum, two, to four or six grains,
Water, one ounce.

No. 205.

Sulphate of zinc, two grains,
Solution of acetate of lead, four drops,
Camphorated spirit of wine, twelve drops,

Water, one ounce. To be applied frequently to the eyes, by means of a syringe, or linen rag, dipped in the lotion.

Some practitioners advise the use of *blue pill*, as an alterative; the tonic which is most generally employed is the *sulphate of quinine*. During the treatment of chronic ophthalmia, the bowels are to be kept open by gentle laxatives, such as Epsom salts,

occasional doses of rhubarb, with carbonate of potass, (five grains,) and when the tongue is foul, and the digestive organs deranged, it will be useful to administer, occasionally, an emetic of *ipeca-cuanha*, (twenty to thirty grains.)

FAINTING OR SWOONING.

A fainting fit frequently takes place suddenly, but, in general, it is preceded by nausea, or a feeling of uneasiness at stomach, confusion of the head, quivering of the lips, dimness of sight, coldness of the limbs, paleness of the face and lips, a breaking out of a sweat on the forehead and neck, and a weak, frequent, and variable pulse. These symptoms sometimes increase gradually, until the patient is no longer able to speak or move, though he may be perfectly conscious of all that is going on around him. In most cases, however, the fit comes on suddenly, the individual falls down in a state of insensibility; the pulse ceases to be felt at the wrist, the respiration is suspended, and, in a word, he lies as if overtaken by sudden death. The fit usually terminates in the course of a minute or two, though occasionally it continues during an hour or two, or even longer. A deep sigh commonly precedes recovery.

Fainting is, for the most part, a symptom of some other affection, rather than a disease in itself. It often accompanies disease of the heart, and may be brought on by any very painful disorder; by loss of blood, excessive discharges or evacuations; debility, however induced, and by sudden and violent mental emotions. Females and delicate people are most subject to fainting; in the former it is often brought on by wearing stays too tightly laced, and by sitting with the back to the fire during meals. Some people, from peculiarity of habit, swoon on seeing blood or any disagreeable object; in others, the same effect is produced by pungent or disgusting smells.

Fainting, in connexion with hysterical affections, is never attended with danger; but when it arises from obstruction in the heart or great blood-vessels, at the commencement, or during the course of fevers, or from extreme debility, it is to be viewed in a more serious light. This affection, in fact, is only to be dreaded when the cause which gives rise to it is of a dangerous

nature. A common fainting fit is usually of very little consequence, and often occurs in people otherwise in good health.

The state of insensibility, the cessation of breathing and of the pulse, the pale countenance, and death-like appearance of the patient, distinguish a fainting-fit from all other disorders; indeed, it is more likely to be mistaken for death than any thing else. Placing a mirror before the mouth and nostrils, and observing whether or not it become moistened by the breath, is an ancient and well-known means of ascertaining if life be extinct: this is strikingly shown by Shakspeare.

I know when one is dead, and when one lives;
She's dead as earth:—Lend me a looking-glass;
If that her breath will mist or stain the stone,
Why, then she lives.

KING LEAR, Act 5, Scene 3.

TREATMENT. Haller, Bichat, and other distinguished physiologists, have clearly shown that fainting is the necessary consequence of the suspension of the circulation of blood in the brain, which cannot perform its functions without the stimulus of that fluid. It is, therefore, obvious that the principal means of cure must consist in exciting the action of the heart, and thereby restoring to the brain that stimulant which is indispensably necessary for its action. Nature alone, in ordinary cases, is able to effect this in the course of a few minutes, if the patient be placed in the horizontal position, which is the first thing to be done to arrest the fit. Removing the patient to a cooler apartment, or exposing him to a current of cold air, sprinkling cold water on the face and hands, rubbing the left side of the chest with *eau de cologne*, or any other stimulating fluid, and applying *hartshorn* or *aromatic vinegar* to the nostrils, are the simple means usually resorted to for the purpose of rousing the individual. Internally, a little brandy and water, or a teaspoonful of *aether*, may be given as soon as he is able to swallow.

In severe and protracted fainting-fits, consequent on flooding, after delivery, it becomes absolutely necessary to administer brandy or wine, and laudanum, in small and frequently repeated doses, in order to restore animation, and prevent the recurrence of the fits. Fainting, in such cases, is not unattended with

danger, and the frequent renewal of the fits might soon prove fatal; the dread, therefore, of increasing the flooding by the stimulating action of these remedies on the system, ought not to prevent their use, since it is obvious that to prevent the patient sinking from exhaustion, her strength should be supported at all hazards.

Fainting, when it occurs frequently, is usually caused by some internal disorder; we must, therefore, direct our attention to the removal of the affection upon which it depends. When proceeding from organic disease of the heart, it must be looked upon as a dangerous symptom, and a radical cure is scarcely to be expected. If in consequence of debility, a nourishing diet, quinine, and wine, are indicated. Those who are constitutionally predisposed to swooning, from deficiency of blood, delicate or peculiar habit of body, want of moral courage, or extreme nervous sensibility, should, of course, avoid all the exciting causes which tend to induce it.

FLOODING.

By Flooding we here understand those sudden and copious discharges of blood from the womb, which take place soon after the birth of the child. Flooding may occur under two different circumstances, which it is of importance to distinguish; either the after-birth (*placenta*) remains in the womb, and is the cause of the bleeding, or the after-birth has been expelled, and the Flooding depends on want of proper contraction in the womb, to close up the open mouths of its vessels.

In the first case, that is, when the after-birth remains in the womb, we can only stop the bleeding by removing the after-birth. This operation, however, must not be attempted without due consideration. When the woman has been reduced by the loss of blood to a very dangerous state, shown by the constant fainting, absence of the pulse, and coldness of the skin, it would be improper to remove the clots of blood in the genital parts, or disturb the patient in any way, lest the bleeding return, and quench the feeble spark of life which remains. But when the patient has rallied under the use of small quantities of brandy and other cordials, or when the Flooding has not been extremely

copious, then an effort may be made to remove the after-birth. This is to be done by *very gently* pulling the navel-string, or by rubbing the lower part of the belly with the hand; by pouring cold water on the belly, and by giving the *ergot of rye*; three or four teaspoonfuls of the tincture, or half a drachm of the powdered ergot, may be administered every twenty minutes, during one hour, until the desired effect is produced. Should these remedies fail, a silk pocket handkerchief should be passed into the vagina, and gradually pushed up against the womb, until the genital parts are completely filled; this done, medical assistance must be immediately sought, for the only way of stopping the bleeding effectually is to pass the hand into the womb, and bring away the after-birth.

Flooding may occur, however, even when the after-birth has been entirely expelled. Here we must endeavour to make the womb contract, by rubbing the lower part of the belly smartly with the hand; by applying very cold cloths over the same part; or by placing a firm pad over the womb, and then binding it round the body with a linen or flannel bandage, as tightly as the woman can bear it with comfort. The *ergot of rye* must be given, at the same time, in the doses which we have just mentioned.

In some cases the Flooding is internal; that is, the blood continues to be discharged into the hollow of the womb, where it collects in large quantities, and does not find its way out through the genital parts. This is a very dangerous form of Flooding, because, as there is no external appearance of blood, it might easily be supposed that the woman was not suffering from the disease. The existence of internal Flooding may be suspected when the womb can be distinctly felt rising for some height at the bottom of the belly; and when, at the same time, the patient complains of ringing in the ears, giddiness, and an inclination to vomit. If the face now become suddenly pale, the pulse sink, the skin become cold, and the woman frequently faint, no time is to be lost; the means before described are to be employed, and should they fail, the hand must be passed up into the womb, in order to remove the clots of blood, and excite the womb to contract upon it.

As a general precaution during the treatment of Flooding, we

should mention that the patient must be kept perfectly quiet, in a cool room, and that she should never be suddenly raised from the lying posture, or be permitted to make any bodily exertion whatever.

The management of the patient, after Flooding has ceased, requires very great care and caution. When the loss of blood has been excessive, the woman is reduced to the lowest state; complains of a constant feeling of sinking, and is extremely restless and depressed in spirits. Notwithstanding her desire to change posture, she must be kept at rest; forty drops of *laudanum*, or two grains of *opium*, are to be given, and, if necessary, repeated in the course of an hour: when a little sleep has been thus procured, some light nourishment may be allowed, such as beef-tea or jelly, given in small quantities and frequently repeated; and when the stomach begins to recover itself, the diet may be cautiously improved. Should the bowels be confined, the following draught will be found useful.

No. 206.

Rhubarb, ten grains,
Sulphate of potass, half a drachm,
Peppermint water, ten drachms. Make a draught; to be repeated in four hours, if necessary.

Diarrhoea, or looseness of bowels, may be checked by the *chalk mixture*, with *opium*, or any other mild astringent. (See p. 215.)

One of the most frequent and distressing effects of severe Flooding is *head-ache*, which often lasts for several weeks, in spite of our efforts to relieve it. The head-ache, in this instance, depends upon loss of blood, and should never be treated by leeches. Mild nourishment, evaporating lotions, (spirit of sulphuric æther, one ounce; water, one ounce; mix,) and *Fowler's solution of arsenic*, (six drops thrice a day,) are the means which we have found most serviceable in this affection.

FOXGLOVE. (*Digitalis.*)

Foxglove is one of the most beautiful and useful of our indigenous plants. It grows on sandy and gravelly banks, in woods and uncultivated places, and flowers in June and July.

Foxglove is directly sedative, and possesses the peculiar power of depressing the circulation of the blood; when given in full doses, it reduces the pulse from seventy-five to forty-five or forty beats in a minute, rendering it at the same time feeble, and frequently intermitting. If given in too large doses, it produces giddiness, dimness of sight, nausea, faintness; and then vomiting, swooning, convulsions, stupor, and death.

From the influence which this remedy exerts in lowering the action of the heart, it is of great service in enlargement, and other affections of that organ, attended with increased action; and is used on the same principle at the commencement of pulmonary consumption, in spitting of blood, bleeding from the nose, and in excessive discharges of the menstrual fluid.

In dropsy there is no diuretic medicine so powerful and certain in its action as Foxglove, more especially in dropsy of the chest; and it is much used by the distinguished Italian physician, Tommasini, and his followers, in all inflammatory affections, after the circulation has been to a certain extent diminished by means of blood-letting.

Though there are few remedies of more value, when judiciously used, than this, yet it is by no means well adapted for popular use, since, from the irregularity of its action, and the difficulty in finding the preparations of the shops always of an uniform strength, it requires to be used with much caution, and with strict attention to the rules laid down for its administration. In many cases it may be given for some length of time in gradually increased doses, with very little effect, until at length its action is declared suddenly, by giddiness, sickness at stomach, and the first series of symptoms above enumerated; and if the same doses were afterwards persisted in, death would soon be the consequence. This is generally supposed to arise from the medicine accumulating in the system; but the Italian physician above alluded to, views its mode of action in a different light; he believes that the remedy is borne by the system in larger or smaller doses, according to the degree of inflammatory action, and that when the inflammation begins to yield, it can no longer be tolerated to the same extent, and requires to be gradually reduced in quantity, according to the decrease of the inflammation. In a practical point of view, however, the principal thing

to be attended to in administering Digitalis, is to watch its action carefully, and as soon as the pulse begins to fall, or any of the lowering symptoms already noticed manifest themselves, the remedy must either be discontinued entirely for a short time, or given in diminished doses. If from neglect in not attending to the state of the patient while under the influence of Foxglove, its lowering action may be induced to such an extent as to require the use of warm brandy and water, æther, laudanum, ammonia, or other strong stimulants, in small and frequently repeated doses.

The *powder* of Foxglove should be kept in opaque bottles, and ought not to be used if deprived of the green colour and peculiar odour of the fresh plant. The dose is one grain, every five or six hours, or oftener, until it begin to act on the system, and then the quantity must be gradually diminished, or given at longer intervals. The dose of the *tincture* is ten drops, gradually increased to thirty, three times a day; and of the *infusion*, one or two tablespoonfuls may be taken twice a day, in a little cold water.

GAMBOGE.

Gamboge is a gum resin, brought principally from China. The species of the tree from which it is produced is not yet accurately ascertained.

This substance is powerfully purgative, and was formerly much used to expel the tape-worm. It causes watery evacuations, and is, therefore, sometimes given in dropsy, along with cream of tartar, or in combination with the sulphate of potash.

The dose, when taken alone, is from two to six grains, mixed with a little syrup or honey, and a few grains of powdered cinnamon. Gamboge is usually taken in the following form. "Gamboge, powdered, a scruple; aloes, powdered, a scruple and a half; ginger, powdered, half a scruple; Castile soap, two scruples. Mix well together, and divide into five-grain pills." These are the *compound gamboge pills* of the London pharmacopœia, which, in doses of from two to four, act very effectually in opening the bowels.

GENTIAN.

This plant grows in great abundance in Switzerland and Germany; its root is highly esteemed throughout Europe, as one of the most powerful and most useful of the bitter tonics. This remedy is very serviceable in indigestion, in general debility, and also in tedious convalescence, particularly in those cases in which the patients have a pale and waxy appearance of countenance, with loss of appetite, slow digestion, weak pulse, and a tendency to swelling of the ankles at bed-time. In scrofulous cases, where strengthening medicines are indicated, there is no better tonic than Gentian. The powder of this root was formerly considered a valuable remedy in gout, and formed a considerable portion of the well-known Portland powder. It possesses the advantage of not being decomposed by acids, alkalies, or the metallic salts of iron, zinc, and silver; and is, therefore, a useful vehicle for their administration.

The dose of the *infusion* of Gentian is two tablespoonfuls, or a wineglassful, twice a day. Of the *extract*, ten grains to half a drachm, twice or thrice a day. Of the *tincture*, a teaspoonful in a little cold water. These preparations form the basis of nearly all stomachic or tonic remedies.

GLAUBER'S SALT. (*Sulphate of Soda.*)

This salt was discovered by John Glauber, a Dutch alchemist of the sixteenth century, who called it *sal mirabile*. It is a mild and sure purgative, in doses of from two drachms to an ounce and a half, and was formerly much in use, but at present Epsom salts are almost invariably preferred.

GONORRHCEA.

Gonorrhœa consists in a discharge of yellow matter from the genital parts of the male or female, excited, in all cases, by the application of a contagious material from one individual to another. In males the discharge comes from the inside of the urethra or passage to the bladder; in females, from any part of the membrane which lines the genital parts. The infectious

matter which excites Gonorrhœa is generally communicated during unclean coition; but it has been proved, beyond all doubt, that a discharge exactly similar to that of Gonorrhœa may, under certain circumstances, be produced by connexion with a woman whose genital parts are perfectly sound. Gonorrhœa may commence at any time, after impure connexion, but usually begins from the third to the seventh day, by an itching at the orifice of the urethra, which, if examined, appears to be unusually red and a little swollen. Soon afterwards a slight running takes place from the urethra, of a whitish fluid, and this gradually increases in quantity, while at the same time it becomes more thick, until at last thick yellow matter issues from the canal. The disease is now fully established, and gives rise to pain during the passage of the urine, (*scalding*;) sometimes this pain is extremely severe, but, in other cases, the patient scarcely feels any uneasiness of the kind during the whole course of the disease. In ordinary cases of Gonorrhœa the peculiar inflammation of the urethra, which constitutes the disease, does not extend up the passage beyond two inches from its orifice; when the inflammation is acute, or passes further up, the scalding is very severe, the under surface of the urinary passage becomes hard, feels like a cord, and is very painful to the touch; the stream of urine is diminished from the swelling of the parts which surround the urinary passage, and blood is often discharged with the urine, from the bursting of small inflamed blood-vessels. The patient should not be alarmed at this mixture of blood in his urine, even when the quantity of blood is pretty considerable. When the inflammation or irritation extends from the urinary passage to the spongy substance which surrounds it, a very painful affection of the genital organ, called *chordœe*, is excited; and when the irritation reaches the bladder, the patient cannot retain his urine for a moment, but is compelled to empty the bladder as soon as ever the desire to make water is felt; if he attempt to keep in the urine, an intolerable pain is produced in the bladder, and in the extremity of the genital organ, exactly similar to what happens during a fit of the stone.

Gonorrhœa is often attended with two unpleasant consequences, which arise from the irritation extending to the glands in the groin, or to the testicles. In the first case a hard painful swelling

(*sympathetic bubo*) appears in one of the groins; in the second case, the inflammation extends along the seminal ducts down to the testicle, which becomes swollen and extremely painful to the touch, (*swelled testicle.*)

When a proper attention is not paid to cleanliness during the course of Gonorrhœa, or the extremity of the genital organ is unusually irritable, the discharge of matter is apt to produce small sores on the *nut*, or end of the penis, and to cause inflammation of the foreskin; if this state be neglected, the foreskin sometimes swells to such a degree, that it cannot be drawn back over the nut, or, what is still more dangerous, when the foreskin has been drawn back, it contracts, like a tight cord, round the end of the genital organ, cannot be pulled forward, and sometimes gives rise to mortification of the part.

We have as yet described Gonorrhœa only as it exists in men; when women are affected, the disease is generally more mild, and not so apt to irritate the bladder, or to produce swelling in the glands of the groin. The pain is commonly slight, and soon disappears; the scalding, also, is more frequently absent altogether, and the running soon terminates in a discharge of matter which bears a close resemblance to the whites, or *fluor albus*.

The time during which a Gonorrhœa lasts is extremely variable; if left to itself, the inflammation usually subsides in four or five weeks, and turns into a chronic discharge (*gleet*) of slimy mucus from the urinary passage, without any pain, scalding, or unpleasant symptom; but it will always be prudent to endeavour to cut short the disease, not so much on account of any danger attending it, as of the disagreeable consequences to which it often gives rise.

TREATMENT. Gonorrhœa may often be prevented by certain attentions to cleanliness after connexion; and whenever any suspicion exists, the parts should be carefully washed immediately after *coitus*, with soap and water, or still better, with a strong solution of alum, (a piece as large as a walnut, in a wine glassful of water,) this latter substance possesses the valuable property of completely destroying all morbid animal secretions. A small quantity of the alum solution should be injected with a syringe between the lips of the urinary passage, (but not sent up higher than an inch,) in all cases where we have reason to fear

that an impure connexion may have taken place. When the running is completely established, we must endeavour to alter the peculiar inflammation of the urinary passage upon which it depends; this may be done by the use of external and internal remedies. If the pain and inflammation be very severe, it will be necessary to subdue them by applying *six or eight leeches* along the lower part of the urethra; by covering the organ with lint moistened in *Goulard's lotion*; by opening the bowels with *castor oil*; and by compelling the patient to drink large quantities of mild diluent fluids, such as linseed tea, or a decoction of marshmallow. When the inflammation has been brought down by these means, or when it has been moderate from the commencement, we may begin to give, at once, either *cubebs*, or the *balsam of copaiva*. A drachm of the powdered *cubebs* may be administered thrice a day, in a wine-glassful of wine and water; this medicine is much praised by Sir A. Cooper and Dr. Ratier, a French physician, who places the highest confidence in its efficacy. The latter advises the patient to abstain as much as possible from drinks during its administration. When *copaiva* is employed, from twenty to thirty drops may be given three times a day, on a bit of sugar, (see *Copaiva*,) or in the following manner, as recommended by Sir A. Cooper.

No. 207.

Balsam of copaiva, one ounce,
Mucilage of gum Arabic, one ounce,
Camphor mixture, four ounces. A tablespoonful to be taken night and morning.

To conceal the unpleasant taste of the balsam, it may be given in the gelatine capsules of Mothe or Wildenow, or it may be rubbed up with magnesia into a kind of soap, and then made into pills; the dose then being from twelve to twenty grains. Sir A. Cooper has found advantage in combining the *cubebs* and *copaiva* together, thus,

No. 208.

Balsam of copaiva, one ounce,
Powdered *cubebs*, two drachms,
Mucilage of gum Arabic, one ounce,
Camphor mixture, four ounces. A tablespoonful, twice or three times a day.

The *copaiva* or *cubeb*s may be continued for eight or ten days, beyond which it would be useless to employ them, if they do not produce any good effects. We must, then, have recourse to injections, which are to be thrown into the urinary passage by means of a small syringe. People have often a dislike to use injections, lest the fluid pass up into the bladder. There is no fear that this will happen: the sides of the urinary passage lie in close contact with one another, and fluid cannot be driven into the bladder with the ordinary syringe; besides, we should remember that in no case is it necessary to push the injection with force; if it pass for a couple of inches into the urinary canal this will be sufficient. The following substances may be used for injections.

No. 209.

Sulphate of zinc, six grains,
Goulard water, four ounces.

No. 210.

Sulphate of copper, (blue vitriol,) one grain,
Rose water, two ounces.

No. 211.

Nitrate of silver, five grains,
Water, one ounce.

The fluid is to be injected two or three times a day into the orifice of the urinary passage; one injection may be substituted for another, and the strength may be gradually increased by adding half a grain, or even a grain, of each substance to the water. As a general rule, it will be prudent not to commence injections before the disease has lasted for ten or twelve days; but, under urgent circumstances, it may sometimes be cut short by injecting the *nitrate of silver*, (ten grains to the ounce,) as soon as the pain and scalding are discovered. Mr. Thomas Evans, of London, has assured us, that he is in the habit of completely stopping Gonorrhœa, in its first stage, by making the patient inject any mild fluid, as cold water, rose-water, or a weak solution of alum, (two grains to the ounce,) constantly during the day. The patient must lie in bed, and throw up the fluid every fifteen minutes, or *half hour* at least. The constant injections

prevent the gonorrhœal inflammation from gaining ground, and the disease is stopped within twenty-four hours. Gonorrhœa in women may be safely treated with the same injections from the beginning: the quantity of each substance used must, however, be doubled.

We have now to describe the treatment applicable to the different accidents which may arise during the course of Gonorrhœa. Severe inflammation must be subdued by leeches, purgatives, and cold lotions. When the matter accumulates underneath the foreskin, the parts should be washed two or three times a day in tepid water, and if there be any small sores about the root of the foreskin, these should be dressed with a small quantity of *zinc ointment* on a piece of lint. If the bleeding from the urinary passage be copious, it may be arrested by ice-cold lotions to the genital organ and cooling drinks. The *chordee*, and painful erections, which almost always attend severe Gonorrhœa, may be relieved by the following draught, taken before going to bed.

No. 212.

Extract of hemlock, five grains,
Liquor of potash, twenty drops,
Camphor mixture, four ounces.

Or a pill, containing one grain and a half of *opium*, with five of *camphor*, may be taken at bed-time, and repeated, if necessary, in the morning. It has also been found beneficial to rub the under surface of the genital organ with an ointment composed of equal parts of fresh *belladonna* leaves (powdered) and lard. When the effects of the *chordee* are long in going off, we must rub in a small quantity of the *camphorated mercurial ointment* every night, along the surface or sides of the genital organ. When the irritation extends to the bladder, and gives rise to a frequent desire of making water, with pain, a draught containing six grains of the extracts of *hyoscyamus*, or of *hemlock*, in four ounces of *camphor mixture*, must be taken at night; or two grains of *opium* may be taken in pill, and an ounce of *castor oil* administered in the morning, to prevent costiveness. When the glands in the groin begin to swell and are painful, six to ten *leeches* should be applied to the painful part; the patient should

endeavour to keep as quiet as possible, and should constantly apply cold *Goulard water* to the swelling, with lint covered by oiled silk. The extension of the inflammation to the testicle produces a very painful affection: the testicle swells, the skin which covers it becomes red, and a constant pain shoots up from the testicle to the groin. This complaint may often be prevented by wearing a *suspensory* bandage to support the testicle, from the commencement of the Gonorrhœa; but when it has seized on the part, we should at once apply ten to twenty *leeches* to the surface of the inflamed testicle, and repeat the leeches a second time if the pain continue unabated. The bowels must be freely acted on by *calomel* and *jalap*, or the *extract of colocynth*, followed by the *black draught*, (see page 32,) in the morning. The testicles must be supported by a suspensory bandage or a silk handkerchief, and a lotion composed of *Goulard water*, or one ounce of spirits of wine, in five ounces of water, should be constantly applied to the inflamed parts. To relieve the pain at night, which is sometimes very severe, fifteen grains of *Dover's powder* may be given, with two grains of *calomel*, after the inflammation has been brought down by leeches and purging.

Gleet. When Gonorrhœa has continued for some time, and the pain has completely disappeared, the discharge gradually loses its yellow colour, becomes greenish, and finally clear; the constant running of this clear discharge from the urinary passage is called a *gleet*; but any excess of diet, &c. is apt to bring back again the greenish or even yellowish running. Gleet is not attended with much personal inconvenience, and is often neglected on this account, and allowed to continue for many months or years. When it has lasted for a long time, it is frequently difficult to cure it by any treatment which we may adopt. Sir A. Cooper recommends the *balsam of copaiva* in the following manner.

No. 213.

Balsam of copaiva, one drachm,
Spirit of nitric aether, two drachms,
Mucilage of gum Arabic, one ounce,
Camphor mixture, four ounces. A tablespoonful to be taken two or three times a day.

The powdered *cubebs* may also be tried, in the dose of two

drachms, three times a day. Either of these medicines should be continued for two or three weeks; but they often fail to check the running, and we must have recourse to injections, which, after all, are the most sure and efficacious remedies. One grain of *corrosive sublimate*, dissolved in twelve ounces of water, makes an excellent injection to begin with, and the strength may be gradually increased to two grains; or any of the fluids before mentioned, (page 305,) may be used: when they produce a sense of smarting along the urinary passage, they are strong enough. The injection should be thrown up twice or thrice a day. Some benefit will also be derived from frequently bathing the genital organs with cold water; and when the patient is weak, or of feeble constitution, change of air, together with a course of *steel* medicines, (ten drops of tincture of steel, or ten grains of the rust of iron, thrice a day,) may be had recourse to.

GOUT.

(From *gutta*, a drop.)

This name, which is more fanciful than scientific, was first given to the disease which we are about to describe, in the thirteenth century, by a monk of the Dominican order, named Radulphe; and so general has the term now become, that it is found in the greater part of European languages: *goutte* in French, *gotta* in Italian, *gota* in Spanish, &c. It is supposed that this denomination arose from the absurd idea that the disease was owing to a peculiar morbid fluid or humour, deposited by drops in the affected parts.

The Greek and Roman physicians, and enlightened and scientific men in all ages, have investigated this disease with the greatest care, and yet it must be confessed, that after all the numerous theories advanced, and the various methods of treatment which have been adopted, we are still far from having arrived at a knowledge of its essential nature, or of the cause from which it results; and that our plans of treatment, without the powerful aid of temperance and exercise, are still as uncertain as they were in the most remote times.

Gout, in all ages and countries, has given a preference to the indolent and intemperate,—to those who fare sumptuously every day; and it would appear that among the Greeks and Romans,

a kind of disgrace was attached to this disorder, and they consequently endeavoured to conceal it with the greatest care. In later times, however, Gout has ceased to rank among the diseases which people are desirous of concealing ; it has, on the contrary, been understood to imply a degree of affluence and rank in the patient, and, in fact, has been considered as a fashionable disease. Even the celebrated physician, Sydenham, consoled himself in this manner. "But," he says, "what is a consolation to me, and may be so to other gouty persons of small fortunes and slender abilities, is, that kings, princes, generals, admirals, philosophers, and several other great men, have thus lived and died. In short it may, in a more special manner, be affirmed of this disease, that it destroys more rich than poor persons, and more wise men than fools."

The definition of Gout by Cullen, is perhaps the best and most concise which has hitherto been given ; he says, "Gout is an hereditary disease, arising without any external cause, but preceded by some unusual disturbance of the stomach, fever, pain affecting some joints, but especially those of the feet and hands, returning at intervals, and for the most part alternating with affections of the stomach, or of some other internal structure."

To describe all the various forms and modifications of this disease, and the numerous affections with which it is often connected, would be a task neither in accordance with our own inclination, nor with the design of this work. We shall, therefore, make only two divisions of Gout, the regular or acute, and the irregular or chronic Gout.

REGULAR, OR ACUTE GOUT. An attack of Gout is invariably preceded by certain symptoms, which, though not observed in every case, always take place in a more or less marked manner. These premonitory symptoms vary greatly in different individuals, but are, in all cases, connected with a deranged state of the digestive organs ; the tongue is foul, or much redder than natural ; there is heartburn, sometimes belching of sour fluid, and perhaps vomiting ; the patient feels sleepy and uncomfortable after eating, is frequently low-spirited, and sleeps badly. The feet are sometimes very cold, at other times distressingly hot ; a pricking, darting, or numb sensation is felt occasionally in the

legs and feet, particularly in the foot which is about to be attacked; and some hours previous to the paroxysm there are generally flushes of heat alternating with shivering. Indeed, a long train of warning symptoms might be easily enumerated, but they are all so irregular, and vary so much in different individuals, that we see no necessity for noticing them further. It is worthy of remark, however, that every person subject to Gout experiences some particular sensation or symptom, which serves to announce the approach of an attack.

At length the first paroxysm declares itself, as in asthma, about two or three o'clock in the morning. The patient awakes suddenly, with a violent throbbing pain, generally at the ball of one of the great toes, though sometimes at the heel, instep, or ankle. The pain goes on increasing, accompanied with a sensation of burning heat, weight, and stiffness of the part, and severe shooting pains in the limb. This local suffering is at first attended with rigors or shivering, which is soon replaced by fever and great restlessness. In mild cases the pain, after a few hours, abates a little, and gentle perspiration breaks out; but in general it continues without any amelioration, until about midnight, and then begins to diminish until towards two or three o'clock in the morning, when the patient falls asleep, after twenty-four hours' severe suffering. On awaking he finds the part very tender, red, shining, and swollen, with considerable distension of the veins of the foot. The following night the pain and fever are renewed, and again relieved in the morning; this goes on regularly during a longer or shorter period, each paroxysm being less severe than the preceding one; until at last the attack terminates entirely. The part remains swelled for some days afterwards; there is severe itching, and the skin falls off in scales; the patient then feels better in every respect than before the attack.

The first attacks of Gout seldom continue beyond three or four days, and are confined to one foot; but when the disease has gone on for some time, the inflammation, when declining in one foot, suddenly attacks the other, and frequently the fingers, wrists, or knees: then the acute gnawing pain, the shivering, and subsequent fever; the swelling and redness of the part, and all the symptoms as above described, recommence. At the expiration of three or four days, the pain is again relieved; but

the attack does not end here : a similar fit supervenes, affecting the same or another joint, or perhaps several parts simultaneously, accompanied with the same series of symptoms, and continuing during the same length of time. Hence, to complete an attack of Gout, three or four consecutive fits are required, each taking three, four, or five days, to run its course. Fifteen days may be considered as the average duration of an attack of Gout, but it frequently continues much longer.

The time which may elapse between the attacks is very uncertain ; twelve months, or even several years, may intervene between the first and second attack, but the interval is often much shorter ; this depends in a great measure on the constitutional tendency and manner of living of the patient.

When the disease has become confirmed, the attacks occur more frequently, are more severe, continue longer, extend to several joints, and affect, to a certain extent, in some individuals, almost every joint of the body, until at last the constitution gives way, and the patient is rendered miserable.

One of the most constant phenomena connected with Gout, is the passing of high-coloured urine during the attack, frequently containing particles of sand or gravel ; but when the feverish symptoms have abated, the sediment acquires a white colour, and resembles chalk or magnesia.

IRREGULAR, OR CHRONIC GOUT. Chronic Gout is generally the consequence of several attacks of the acute form; or it may appear as a primary affection : in both cases the difference which exists between it and acute Gout, consists in the pain being less severe, the feverish symptoms milder, or entirely absent, and the attacks of much longer duration, continuing in some cases several months, in others all the year round, with the exception of two or three of the summer months. But, in general, before Gout becomes chronic, several of the joints have been affected : from the feet it has passed to the ankles, fingers, wrists, knees, &c. In this state of the disease several joints are seized in succession during the same attack ; but when it wanders in this manner from one part to another, it rarely happens that the pain keeps up its original intensity.

The pain in chronic Gout is constant, but not nearly so severe as in the acute form : at times, however, it becomes considerably

increased, particularly after meals, during the early part of the night, and when the patient changes the position of the affected parts; it is also aggravated by changes of temperature and fits of anger. Under these or other circumstances, the suffering occasionally becomes acute in the very extreme: even persons otherwise robust, and possessed of the greatest courage, are driven almost to a state of madness by the violence of the pain: in such cases a fainting fit is not an extraordinary occurrence.

After acute Gout the joints soon resume their usual strength and freedom of motion, but in the chronic form they remain stiff, swollen, and not unfrequently deformed. In some cases, especially in those who have been long subject to Gout, a substance resembling soft mortar, or plaster of Paris, in a half liquid state, is deposited about the small joints; and when this matter becomes hard, it is commonly called *chalk stone*. These chalky concretions may be formed immediately under the skin, or within the joints: they are often the source of great pain, sometimes cause inflammation, and the formation of matter, along with which they are occasionally discharged. Chalk-stones were discovered by Dr. Wollaston to be composed of urate of soda.

These local symptoms are connected with a variety of distressing sensations, indicating a deranged state of the system. The patient complains of lassitude; lowness of spirits; a feeling of fulness and flatulent distension after meals, heartburn, and other symptoms of indigestion; cramps, and wandering pains in the body and limbs; palpitation of the heart; occasional giddiness, or swimming in the head; constipation, or looseness of the bowels; and some gouty patients are troubled with piles and irritation of the urinary organs. Several other symptoms might be noticed, but they vary in different individuals, according to the habits and temperament of the patient.

One of the most remarkable and peculiar phenomena of Gout, is the facility with which it moves from one part to another. After attacking several of the joints in succession, it may be suddenly transferred to the stomach, bowels, brain, heart, kidneys, or in fact to any internal organ or part. This is distinguished by the term *retrocedent Gout*. If Gout change its seat from a joint to the stomach, or any other organ, during an acute paroxysm, the internal affection will also be acute; but if the

Gout be chronic, the internal disorder will be less severe and longer continued. When Gout is thus transferred, the stomach and bowels are the parts most frequently attacked; the former with pain, spasm, sickness, and vomiting; the latter, either alone or in conjunction with the stomach, with violent colic, or acute inflammation. Gouty people, however, are too apt to attribute every internal disorder, whether functional or inflammatory, to the influence of Gout; though it by no means follows that the numerous derangements to which they are subject are characteristic of this disease, merely because they co-exist or follow it. In fact, the translation of Gout from the joints to internal parts, is not nearly of such frequent occurrence as is generally supposed; and this ought always to be kept in recollection, in order to avoid errors in treatment.

CAUSES. That a predisposition to Gout is transmitted from parents to their children, is a fact not to be doubted; and when hereditary disposition exists, there is every reason to believe that the disease is more ready to declare itself than under other circumstances; but the cases in which it occurs without the more powerful influence of intemperance and idleness, are very rare indeed. Gouty people attribute the disease to this predisposition, as if it were the only cause; but we know that there is nothing more natural, than that the son should acquire the same indolent and luxurious habits as his gouty father, and that there is nothing more likely to happen, than that the influence of those habits on the system, particularly when associated with hereditary disposition, should bring on the same disease. But if the son be placed in a different position in life; if, from reverse of fortune, he be compelled to toil daily, in order to gain a scanty maintenance, he may at least rest assured, that, whatever misfortunes and sufferings he may have to labour under, Gout is not likely to be one of the number.

The influence of age is more clearly shown than that of predisposition entailed on offspring. It was stated by Hippocrates, and has been remarked from his time downwards, that Gout rarely if ever occurs before the age of puberty. The first attack may take place at any period of life, from twenty-five to fifty; but when the predisposition is strong, and the habits of the individual intemperate, it may declare itself much earlier.

Women are most frequently attacked by Gout after the entire cessation of the menstrual discharge; but at no period of life are they so subject to it as men. The late Professor Gregory stated the proportion as one to fifty in England, and one to a hundred in Scotland. This relative exemption is no doubt owing to their temperate habits, and the periodical discharges, by which the system relieves itself.

Sydenham remarked that corpulent people, with large heads, are most frequently affected with Gout; and the remark so often made, is no doubt correct, that gouty people are generally possessed of robust constitutions, which have been abused by intemperance; according to the French adage, "*La goutte est la maladie de ceux qui veulent l'avoir.*" But the most remarkable fact connected with the predisposing causes, is the influence possessed by position in life in the production of Gout. The comparative immunity enjoyed by the poor and laborious, is a fact in itself sufficient to show, that idleness and excess are the causes which most strongly tend to induce this disease.

Excess in eating and drinking, and want of exercise, have the effect of producing constitutional plethora, or superabundance of nutritive matter in the blood; and it appears highly probable that this state of the system, which has been denominated by the French *suranimalisation*, precedes Gout in the great majority of cases. But, besides these causes, a predisposition, either congenital or acquired, is necessary, since it is obvious that all persons of idle and luxurious habits are not attacked by this disease, although, like the sword of Damocles, it is suspended over the heads of those whose chief delight is in the pleasures of the table, and who look forward to no greater enjoyment than that of eating and drinking. Sydenham, one of the greatest physicians that ever lived in any age or country, whose practical observations must be valued as long as medicine is cultivated as a science, and who was himself a severe sufferer from this disease, remarked, that gouty people were great eaters. In addition to this observation, it may be stated that they are also endowed with strong digestive powers; and Roche, a distinguished French physician, has justly remarked, that people with weak stomachs are rarely troubled with Gout, because, if they were to persist in eating too much, instead of being attacked with this disease, they

would either be affected with chronic inflammation or cancer of the stomach.

Venereal excesses have been classed amongst the most powerful causes of Gout; but whatever other evils these indulgences may entail, there is no proof that they ever induce this disease, unless when conjoined with the intemperate use of animal food and wine. This is exemplified in the rare occurrence of Gout amongst the poor, who are just as much addicted to this vice as the rich.

One of the causes to which Gout has been attributed by many authors, both ancient and modern, is over-indulgence in drinking wine; and there can be no doubt that this habit has a strong tendency to bring it on. Observation has also shown that the habitual use of claret, champagne, and port, is more likely to produce this effect, than indulgence in other wines, and malt liquor and cyder more than spirits.

Gout is not a common disease within the tropics, because the inhabitants have not such keen appetites, nor do they consume nearly so much animal food as those of more temperate countries; and, moreover, the perspiration which is constantly kept up, allows the system to throw off redundancies by the skin.

TREATMENT OF REGULAR OR ACUTE GOUT. If an individual who is in the habit of living freely and taking little exercise, and who has inherited from his father a disposition to Gout, begins to feel acute wandering pains, of short duration, attacking the stomach, the joints, the walls of the chest, and other parts, along with occasional cramps of the limbs, restlessness at night, palpitation of the heart, sometimes shortness of breathing, resembling asthma, and slight irritation of the urinary organs, with a chalky deposition in the urine, he is threatened with an attack of Gout, which will not be slow in declaring itself, unless he change his manner of living, take active exercise in the open air, and keep his bowels freely open. So strong, however, is the clinging to old habits, and so difficult are they to overcome, that these warning symptoms are generally neglected, and a fit of Gout is the inevitable consequence.

The treatment rests on the same base as that of other inflammatory diseases, and ought to be conducted on the same principles. If the attack be severe, the patient robust, of a full habit

of body, and sanguine temperament; if the surface of the body be hot, and the pulse strong and hard, blood should be taken freely from the arm, and the bowels cleared out by active purgatives; five grains of *calomel*, with ten grains of the *compound extract of colocynth*, in pills, should be taken, and followed, in the course of three or four hours, by the *black draught*, (page 32,) and these or other purgative remedies are to be repeated until the bowels are freely evacuated. To soothe the pain and promote perspiration, three or four grains of the extract of henbane, or a quarter of a grain or more of acetate of morphine, with four or five grains of James's powder, may be taken night and morning. Recourse should also be had to *colchicum* or *meadow saffron*, a medicine possessed of great power in subduing the attacks of this disease. The tincture of the seeds of *colchicum* is to be given in doses of twenty drops, in a little water, three times a day; but even in these small doses it sometimes purges severely. There is no occasion, however, for administering it in larger doses than are found sufficient to keep the bowels gently open; the object is to obtain and keep up its soothing and depressing action on the system; and when judiciously used, and the doses regulated according to the strength of the patient and the urgency of the case, it has an admirable effect in mitigating the patient's suffering and cutting short the attack. Sir Joseph Banks, Sir Gilbert Blane, and Sir Henry Halford, have strongly advocated the use of *colchicum* in Gout; and have also stated their belief that it is the same remedy as the *hermadactyl*, so much esteemed by the ancients in the treatment of this disease.

In cases where the local suffering is great, and the constitutional symptoms do not authorise general blood-letting, the application of fifteen or twenty leeches to the joint, is often of great service. Considerable relief has frequently been experienced from the application of cold water to the parts. Harvey, so renowned for the discovery of the circulation of the blood, was in the habit, when an attack came on, of sitting with his feet immersed in a pail of cold water; but it would be by no means prudent to follow his example, since many cases have occurred, in which this practice has had the effect of driving the disease inwards on the heart, brain, or stomach, and death has been the

result. Sir C. Scudamore recommends a lotion composed of one part of *alcohol* and three of *camphor mixture*, made lukewarm, (from 75 to 85 degrees of Fahrenheit,) to be constantly applied to the affected part, by means of several folds of fine soft linen. During the night a compress made of strips of linen, moistened with the lotion, may be placed over the parts and covered with a piece of oiled silk. If necessary, a cradle may be applied over the limb, in order to protect it from the weight of the bed-clothes.

As long as feverish symptoms are present, the diet should consist of farinaceous substances, as sago, arrow-root, and panada; or chicken broth, with toasted bread, may be allowed; and the drink should be restricted to barley water, tepid whey, weak black tea, or any other mild beverage.

The patient should take moderate exercise as soon as the attack is over, and he will find advantage from friction of the parts with the hand, or with a flesh-brush, or rubbing them with salt and water, camphorated spirits, or some other stimulating application.

TREATMENT OF IRREGULAR OR CHRONIC GOUT. The treatment of chronic Gout differs only in degree from that of the acute form. General blood-letting is not required, but local bleeding, by means of leeches, will be found serviceable in the more severe cases. The *tincture*, or *wine of colchicum*, is to be taken in small and frequently repeated doses, and the bowels are to be kept open by the occasional use of an *infusion of senna leaves*, containing a little *Epsom salts*, and a scruple of the *sub-carbonate of soda*. A moderate quantity of tender animal food may be taken; this, however, must depend in a great measure on the patient's usual mode of living; and in most cases a glass or two of sound sherry or Madeira wine may be allowed. If the patient have been accustomed to live high, and his constitution be much weakened; if he feel languid and feeble, while the pulse is soft and weak, and the Gout imperfectly developed, it would be improper to retrench abruptly: in this case nourishing diet and wine are indicated, and ought to be taken liberally, until he recover strength, and the disease declare itself more decidedly. But in ordinary cases, the patient ought never to forget that

while the attack continues, any excess in eating and drinking, or exposure to cold and damp, may suddenly give rise to some severe internal disorder, which may place his life in jeopardy.

In this form of the disease the general health should be carefully attended to, and the utmost attention paid to the various functions. The digestive organs, the skin, or the kidneys, may be disordered; hence the necessity of not directing the treatment solely to the cure of Gout, but of adopting the necessary means for the purpose of restoring each function to a healthy state. When the bowels are sluggish, and the evacuations dark, foul, or mixed with mucus, a *blue pill* ought to be taken at bed-time, and followed by the laxative draught, above prescribed, in the morning; but if irritation exist, and the discharges be more frequent than natural, it will then be advisable to take the *Plummer's pill* at night, and a small quantity of *Henry's magnesia*, with *rhubarb*, the following day, continuing these remedies until the healthy function of the bowels is restored. When there is reason to suspect irritation or congestion of the liver, or acrid or accumulated secretions of bile in the biliary organs or passages, the repeated use of small doses of *calomel* or *blue pill* is indicated. If the skin cease to perform effectually the duty which nature has assigned to it, exercise, the warm bath, and frequent friction with the flesh-brush, are the measures which will be found most conducive to the due performance of its function. When the urine is diminished in quantity, thick, and high-coloured, cupping over the kidneys, and the administration of *sweet spirits of nitre* may be found necessary; but in general, if the diet be moderate, and the bowels and skin properly attended to, the urine will not be long in resuming its natural appearance, without the aid of diuretics or more active measures. By attending to these instructions, not only while the attack continues, but during the intervals, the general health will be improved, the fits rendered less frequent, and more easily subdued, and the suffering, even in long-confirmed cases, will be much alleviated.

If, during an attack of Gout, the inflammation suddenly leave the joint and fix itself in the stomach, bowels, brain, or any other internal part, blood-letting, both general and local, and the usual means necessary to subdue inflammatory action, must be had recourse to without delay, while at the same time the feet are to

be placed in hot water, containing mustard, or enveloped in mustard poultices, or blisters may be applied to the ankles or calves of the legs, in order, if possible, to bring back the disease to the joints. Sometimes the internal disorder, instead of being of an inflammatory character, is nervous or spasmodic; the stomach or bowels, for example, may be suddenly seized with violent pain, attended with the most oppressive sickness; here the treatment consists in the administration of strong stimulants; hot brandy and water, or the following draught, may be given, and repeated in the course of half an hour, or at such intervals as may be deemed necessary, according to the urgency of the case.

No. 214.

Æther, half a drachm to a drachm,
Laudanum, the same quantity,
Camphor mixture, four ounces. Mix.

If this remedy do not produce the desired effect, the following draught may be administered.

No. 215.

Castor oil,
Oil of turpentine, and
Tincture of rhubarb, of each a tablespoonful,
Cinnamon water, a wineglassful.

It is of great importance in such cases, to ascertain whether the internal affection is of an inflammatory or spasmodic nature, since the treatment required for the former case is directly of an opposite description from that which is necessary for the latter. It may be inferred that the disorder is spasmodic, from the absence of feverish symptoms, from the pain not being increased on pressing with the hand over the affected organ, and from the temperature of the skin covering the part where the pain is felt, not being greater than natural.

PREVENTION OF GOUT. It is a matter of notoriety that Gout is a disease of the rich, and not of the poor and working classes of society; that it attacks more especially those who lead a luxurious and sedentary life, who pamper their appetite with rich dishes and sauces, who overload the stomach with a variety of articles of food at each meal, and indulge in the free use of

wine, thus inducing a state of plethora, or, in other words, charging the system with a greater quantity of nutritive and excrementitious matter, than can be thrown off by the natural outlets of the body. It is now also a well-established fact, that Gout, in the majority of cases, cannot be traced to hereditary disposition, and that it is notoriously an acquired disease, the result of high feeding and indolent habits. The natural inference, therefore, to be drawn from this, is, that *temperance* and *exercise* are the best preventives of Gout. These simple means exert a constant salutary influence on the whole system, and are at the command of every one; by attending to them, we secure the due performance of the various functions of the body, and thereby maintain health; whereas, by neglecting them, we deviate from the laws of nature, and knowingly bring disease on ourselves.

It is by no means probable that any remedy will ever be discovered capable of eradicating this disease from the systems of those who constantly keep up the cause of it, by continuing their intemperate habits. But if gouty people had sufficient self-command to adopt more active habits, and to forego the sensual indulgences to which they are so strongly addicted, they would soon find out that, instead of being incurable, there are few diseases more under command, and that, in fact, it may be completely prevented.

The most important part of the preventive treatment is a proper regulation of the diet, which ought to consist of tender well-boiled vegetables, stale bread, fruit, eggs, fish, and a moderate allowance of plainly-dressed beef or mutton, once a day. Rich and highly-seasoned dishes, heavy puddings, pastry, salads, pickles, salmon, &c. are to be avoided. No general rule, however, can be laid down; the particular articles of diet must vary in different individuals, and the quantity of food to be allowed must depend, in a great measure, on the extent of daily exercise made use of. A very spare diet should be rigidly adhered to by full-blooded persons, who have a strong hereditary disposition to the disease; but in general this is not necessary. The maxim should be, not to eat more meat, or drink more wine, than is really necessary; to regulate the quantity and quality of food, so as not to injure the health, always keeping in recollection, that people in general, and gouty people particularly,

eat more than is good for them; more in fact than is consistent with the due performance of all the functions of the body; that is to say, with perfect health.

The preventive agent ranking next in importance to a well-regulated diet, is exercise; the French say, "*goutte bien travaillée est à moitié pansée.*" But exercise, in order to produce the desired effect, must be regular and sufficiently active. Walking is to be preferred, if the state of the feet will admit of it, otherwise active exercise on horseback should be employed. Much benefit may also be derived from friction of the limbs with rough towels, or a flesh-brush, night and morning. Flannel should be worn next the skin; cold, wet, and sudden changes of temperature, are to be avoided; the feet must be carefully kept warm, particularly during the night, and the patient should retire to rest at an early hour, in order to insure early rising in the morning, than which there is nothing more conducive to health. If at any time the bowels become constipated, a large teaspoonful of Gregory's powder, (see page 48, No. 36,) or a dose sufficient to produce one or two evacuations, should be taken; and if more active medicine be required, one, two, or more of the pills, No. 109, may be taken at bed-time; but great care ought to be taken to avoid the injurious habit of using strong purgatives.

To promote all the secretions, and as a preventive of Gout, professor Hufeland recommends the following powder to be taken, in three doses, in the course of the day, or in quantity sufficient to produce two or three evacuations from the bowels, and to be continued every month during four to six days.

No. 216.

Gum guaiac, half a drachm,
Milk of sulphur, half a scruple,
Golden sulphuret of antimony, two grains. Mix.

One of the most celebrated specifics for preventing a return of Gout, is the *Portland Gout powder*, which was for a long time in very extensive use. It is composed of equal parts of the roots of round birthwort and gentian, and of the tops and leaves of germander, ground pine, and centaury, all dried, powdered, and sifted. The dose is a drachm, to be taken every morning fasting, and continued during three months. The following remark of

Dr. Cullen will serve to point out the consequences which may result from using this empiric remedy. "In every instance which I have known of its exhibition for the length of time prescribed, the persons who had taken it were indeed afterwards free from any inflammatory affection of the joints, but they were affected with many symptoms of the atonic Gout, (that is, of Gout in which there did not appear to be strength enough to produce a regular fit, and in which, therefore, some of the internal parts were affected;) and all, soon after finishing their course of the medicines, have been attacked with apoplexy, asthma, or dropsy, which proved fatal."

The principles already laid down, infer the necessity of guarding against a change from a very active to a sedentary life, and from low to high living; indeed, the reverse of these changes, if adopted suddenly, are not without risk: in fine, all the usual rules for the preservation of health ought to be particularly attended to by gouty people. In concluding this article, which has been extended farther than was at first intended, it may be stated, that though volumes have been written on the treatment of Gout, yet nearly all that can be said on the subject is comprehended in the old Scotch saying, that "any man might cure himself of Gout by living on a sixpence a day, and working for it."

GUAIAC.

The substance called Guaiac exudes from a tree, native of the West Indies, the wood of which is well known under the name of *lignum vitae*. The Spaniards learned the use of Guaiac from the aborigines of St. Domingo, and introduced it into Spain about the year 1501. It afterwards enjoyed the reputation of being almost a specific in syphilis, during a period of nearly two hundred years. This medicine, though so much valued formerly, is at present comparatively little used. It is possessed of moderately stimulating and sudorific properties, and is given to promote perspiration in some forms of gout, chronic rheumatism, and in certain affections of the skin, but is rarely trusted to alone. In the West Indies it is much used in the treatment of syphilis and yaws.

The dose of Gum Guaiac is ten or twenty grains, mixed with a little mucilage of gum Arabic, or made into pills; the *ammoniated tincture* may be taken in doses of from thirty drops to a drachm and a half, twice or thrice a day, with yolk of egg, or a little mucilage; if given, by mistake, in water, it becomes white and thick.

Gum Guiac enters into the composition of the empirical remedy known by the name of the Chelsea Pensioner. (See Appendix.)

GUM AMMONIAC.

Gum Ammoniac is the produce of an umbelliferous plant, which grows in Persia. This gum-resin is seldom used alone, but is found useful as an expectorant in the chronic cough of old persons, and in some forms of asthma. In the cough which attends hysterical, dyspeptic, and hypochondriacal affections, it is said to be a serviceable remedy. The Americans use it in combination with nitric acid. Two drachms of Ammonia are rubbed up with the same quantity of nitric acid, and then eight ounces of water are added, so as to form an emulsion. A tablespoonful of this mixture, in barley-water, is given every two or three hours, in cases of long-continued cough, in which there is an accumulation of tough mucus difficult to bring up. Ammoniac ought not to be given in consumption, nor when inflammatory symptoms are present. Externally it is used to reduce indolent tumours.

The dose of Gum Ammoniac is from ten to thirty grains.

GUM ARABIC.

Gum Arabic is obtained from a genus of plants called *Mimosa*, by Linnæus, and *Acacia*, by Wildenow. It was formerly imported exclusively from Arabia and Egypt; but the greater part is now procured from Senegal.

Gum Arabic, dissolved in water, is in common use as a demulcent drink, and enters into the composition of many of the mixtures, jujube, and other lozenges, used to allay coughing. It is also sometimes employed in strangury, and at the

commencement of gonorrhœa. *Gum-water* is much used by the French in irritation and inflammation of the stomach and bowels; but there is no evidence to show that it possesses any advantage over linseed-tea, barley-water, and similar demulcent drinks. Gum Arabic may be taken in any quantity; indeed, the negroes of some parts of Africa subsist on it in seasons of scarcity. Dissolved in twice its quantity of water, it is called *mucilage*, which is much used to render oils, balsams, and resinous substances diffusible in water, and serves to give consistence to medicines made into pills.

GUM-BOIL.

A Gum-boil sometimes arises from exposure to cold, but is caused in the majority of cases, by the irritation of a spoiled tooth. Inflammation of the gum generally goes on to suppuration, to promote which, warm fomentations and poultices are frequently applied externally, but they appear to be of very little service. The treatment consists in cutting into the abscess as soon as there is reason to suppose that the smallest quantity of matter has formed. Afterwards the mouth may be washed occasionally with an astringent lotion composed of *tincture of galls* and water, or of twenty or twenty-five grains of *sulphate of zinc*, (*white vitriol*,) dissolved in half a pint of *rose water*. When the pain and inflammation have entirely subsided, the decayed tooth should be extracted, or stopped by the dentist.

HEAD-ACHE.

Head-ache is a very common affection, and frequently occurs as a symptom of other diseases, more particularly of fevers and inflammatory disorders: indeed, there are few affections in which it does not attend, either as an occasional or essential symptom. Nor is there anything surprising in this, when we reflect on the sympathy which exists between the brain and every other part of the body. Head-ache, however, does not always depend on other disorders, it is frequently an essential disease; hence, in directing the treatment, it is of importance to ascertain whether it exists as an independent disorder, that is to say, as an affection of the

brain itself, or is merely sympathetic of a deranged state of the digestive or other organs.

Some authors have minutely described ten or twelve varieties of Head-ache, but we intend here to confine ourselves to those forms of the affection which are most frequently met with.

BILIOUS, OR SICK HEAD-ACHE. This is regarded as the most common form of Head-ache. The inhabitants of large towns, who are accustomed to lead a sedentary life, people of nervous temperament, whose stomachs are weak, irritable, and liable to be deranged from slight causes, are most subject to bilious Head-ache, which may arise from eating a little more than usual, indulging in too many articles of food at one meal, fasting longer than usual, abuse of intoxicating liquors, the excessive use of tea or any other kind of fluid, worms, constipation of the bowels, and from excessive discharge of bile into the bowels, or accumulation of it in the gall-bladder and ducts. A strong predisposition to Head-ache is induced by anxiety, the close pursuit and hurry of business, intense study, and, in a word, long-continued mental excitement of whatever description. When the mind is too actively engaged, the stomach suffers in consequence, becomes weak, and incapable of digesting the usual quantity of food, or particular articles of diet which, under other circumstances, would have given no uneasiness. Here we see the intimate connexion existing between the brain and stomach; in the first instance the mental excitement deranges the stomach and causes indigestion, the brain is consequently re-acted upon, and sympathetic Head-ache is the result. Although, in general, this affection arises from a deranged state of the stomach and bowels, yet there can be no doubt that the brain is occasionally the primary seat of the disorder, and the indigestion only a sympathetic or secondary affection.

Head-ache arising from errors in diet, seldom continues longer than twenty-four hours; but when habitual, it often occurs without any obvious cause, and may continue two or three days, or even longer.

Sick Head-ache commences on awaking in the morning, with a dull uneasy sensation in the head, which soon terminates in an acute pain of one of the temples, sometimes extending to the eye of the same side, or to the whole forehead. Sickness at stomach

commonly follows, and sometimes vomiting of half-digested food, mixed with bile. When the contents of the stomach are discharged, the Head-ache is usually of short duration; but if vomiting do not take place, the pain increases and continues until the patient fall asleep the following night. When derangement of the biliary organs gives rise to Head-ache, the pain is, in most cases, seated in the right side of the head; the cheeks are slightly flushed, and the sides of the nose have a yellowish tint. In protracted cases there is disinclination for bodily or mental exertion, accompanied with a sensation of languor or debility; nausea is not unusual, but vomiting seldom takes place; slight giddiness is experienced at times, the tongue is foul and its edges are red, the feet and hands are cold and damp, and there is slight cough.

TREATMENT. If sick Head-ache arise from an overloaded state of the stomach, an emetic, consisting of from twenty to thirty grains of *ipecacuan*, may be given in a little warm water, and followed by copious draughts of *chamomile tea*. When the sickness is over, two teaspoonfuls of *Gregory's mixture*, (page 48, No. 36,) or an ounce of the *compound tincture of rhubarb*, may be given to open the bowels. When the nausea or uneasiness at stomach is slight, the laxative medicine will generally give relief, without the aid of an emetic; but it may be necessary to repeat the dose, in order to open the bowels freely.

When Head-ache arises from a deranged state of the biliary organs, a *blue pill*, or half a grain of *calomel*, should be taken at bed-time, and repeated every night, or every alternate night, until the Head-ache be overcome, and the action of the liver improved. The *infusion of calumba-root* will also be found a very useful remedy in such cases, and may be taken to the extent of two or three tablespoonfuls, three or four times daily; care being taken, at the same time, to keep the bowels gently open by the occasional use of one or two teaspoonfuls of the *confection of senna*, or any mild laxative medicine which the patient may be in the habit of taking.

In the more protracted cases of this form of Head-ache, the patient is not so likely to derive relief from medicine, as from a moderate and well-regulated diet, conjoined with regular exercise in the open air: mental discipline is also of importance, since we

know that this affection, as well as disorders of the digestive organs, is in numerous cases the effect of long-continued excitement of the mind.

HEAD-ACHE FROM CONGESTION, OR DETERMINATION OF BLOOD TO THE HEAD. Head-ache from congestion, or excess of blood in the head, is often the consequence of the continued or repeated determination of blood to the brain; it sometimes follows fevers and other disorders, and may arise from certain affections of the heart and lungs, or from liver complaints, excess in drinking intoxicating liquors, long-continued mental excitement, wearing tight neck-cloths, or stays too tightly laced, &c.

The symptoms are a dull pain and sensation of weight in the head, giddiness, ringing, buzzing, or other noises in the ears, a feeling of general oppression, and feeble pulse. The pain may be confined to the forehead, or a particular part of it, or the whole head may be affected. Delicate females, affected with obstruction of the menses, are very subject to this kind of Head-ache; in such, the face is pale, but in full-blooded people, who have passed the middle period of life, and have been in the habit of living freely, the countenance is bloated, and the eyes appear red and heavy.

Head-ache from increased determination of blood to the head, generally occurs in plethoric people, who are accustomed to free living, lying too long in bed, and who do not take sufficient exercise. It is a common complaint in young unmarried females of full habit of body and florid countenance, and is sometimes caused by obstruction of the menses, suppression of the discharge from piles, and undue exposure to the sun. Rheumatism may also give rise to this form of Head-ache.

In robust people the pulse is strong or oppressed, the head is hot, there is a sensation of throbbing or beating in the ears, the face is more or less flushed, and the eyes are red and heavy. The pain is exceedingly severe, and frequently attended with a pulsative sensation in the head; there is a feeling of languor and oppression, and the bowels are constipated.

In *rheumatic Head-ache*, the patient, in addition to these symptoms, is affected with pain and tenderness of the scalp, and sometimes the pain extends to the face, or down one side of the neck to the shoulder.

TREATMENT. Congestive Head-ache must be treated according to the age and constitution of the patient; and the means to be resorted to must depend on the circumstances connected with each case.

When the patient is plethoric, and has been accustomed to live well, frequent cupping at the nape of the neck, pouring cold water on the head, bathing the feet in hot water, containing powdered mustard, and the free use of purgative medicine, are the means to be adopted. In protracted cases, a seton placed in the nape of the neck, is a remedy from which relief may be expected. To the above are to be conjoined, moderation in eating and drinking, regular exercise, and the frequent use of the shower-bath.

This treatment, in a less active manner, is to be resorted to when the affection occurs in delicate and irritable people. Local bleeding, by *leeches* or *cupping*, is only necessary in some cases, but the head should be sponged frequently with cold water, containing *eau de Cologne* or lavender-water; and warm purgatives, such as *tincture of rhubarb*, or *pills of myrrh and aloes*, should be taken occasionally.

When this form of Head-ache occurs in chlorotic females, a preparation of iron ought to be used in addition to the above treatment. (See *Menstrual Discharge*.)

When Head-ache is attended with increased determination of blood to the head, active means should be adopted, in order to prevent inflammation of the brain or apoplexy. If the constant application of cold water to the head, and cupping the nape of the neck, have not the effect of relieving the patient, blood should be taken from the arm. The frequent exhibition of active purgatives and low diet are also indicated.

In rheumatic Head-ache, which is frequently an exceedingly painful and very tedious complaint, we have given the following powders with the greatest advantage when other means had failed.

No. 217.

Gum guaiac, half a drachm,
Golden sulphuret of antimony, two grains,
Calomel, one grain,
Extract of aconite, four grains,
Refined sugar, a scruple. Mix. To be divided into two powders. One to be taken in the morning and the other at bed-time, in a little jelly.

These powders are to be repeated during eight or ten days, or longer if necessary.

NERVOUS HEAD-ACHE, or *Migraine*. This variety of Head-ache occurs most frequently in females, more especially in those who are hysterical, and in hypochondriacal persons. It may arise from various causes, such as anxiety and trouble of mind acting on those who lead a sedentary life; intemperance in eating and drinking; not eating a sufficient quantity of food, or living on diet of bad quality; excess in venery, long watching, suppression of habitual discharges; *malaria*, or the effluvia from decaying vegetable matter: it may also be caused by a decayed tooth; and sometimes appears to be hereditary.

Nervous Head-ache generally commences suddenly. It may attack one of the eye-brows, the temple, or the orbit; or one-half of the head may be affected. The pain is dull, lancinating, or throbbing, sometimes exceedingly acute, and aggravated by noise or a strong light: there are no feverish symptoms, nor is the temperature of the head greater than natural. Some patients are restless and irritable, others are languid and almost constantly yawning.

This affection, like ague, is often intermittent, and may come on daily, every other day, once a week, or monthly; but in the majority of cases the attacks recur at irregular intervals. The pain continues three or four hours, a day, or even considerably longer, but in general it goes off during the night.

Nervous Head-ache seldom occurs in young people, or in those who are far advanced in life.

TREATMENT. During the attack the following pills and draught may be found useful; but in many cases the pain cannot be checked nor alleviated by any remedial means.

No. 218.

Camphor, fifteen grains,

Extract of henbane, fifteen grains, or acetate of morphia, three grains,

Extract of liquorice, or conserve of roses, a sufficient quantity to form twelve pills. Two to be taken every five or six hours, or at shorter intervals, if the pain be very severe.

No. 219.

Peppermint-water, two ounces,

Tincture of valerian, (compound,) and

Compound tincture of lavender, (red lavender,) of each a drachm,

Sub-carbonate of soda, fifteen grains. Mix. To be taken shortly after the pills.

Instead of the preceding remedies, the following draught may be taken.

No. 220.

Camphor mixture, two ounces,

Compound spirit of sulphuric æther, (Hoffman's anodyne liquor,) a drachm,
Laudanum, thirty drops. Mix.

The extract of aconite, well rubbed in, over the part affected, sometimes gives considerable relief; and a grain of the salt of aconite, (*aconitina*,) mixed with a drachm of lard, applied in the same manner, has, of late years, been employed with advantage.

Various remedies have been used to prevent the recurrence of the attacks, the principal of which are sulphate of quinine and preparations of iron and of arsenic. If the attack come on at regular intervals, as in ague, the bowels are first to be freely evacuated, and afterwards kept gently open by means of the compound rhubarb pills, or pills of myrrh and aloes; and then the sulphate of quinine is to be administered regularly, in the manner directed at page 12. If this remedy fail, Fowler's solution of arsenic should be taken as directed at page 13.

When this affection occurs in chlorotic females, where there is constitutional debility, and in those who have been weakened by frequent miscarriages, confinement in close rooms, mental anxiety, want of exercise in the open air, and other exhausting causes, the following tonic mixture should be used regularly during three or four weeks.

No. 221.

Infusion of calumba, three ounces,

Tincture of steel, thirty drops,

Tincture of calumba, two drachms. Mix. To be taken in two doses in the course of the day.

In all cases, a mild nutritious diet, with a little wine, exercise in the open air, and a proper regulation of the mind, will greatly assist the action of the medicine.

ORGANIC HEAD-ACHE, or that species of the affection which arises from change of structure within the skull, is at first not easily distinguished from some of the other forms of Head-ache; but after some time the symptoms become less ambiguous. The pain, if not equally severe at all times, is never entirely absent,

is much increased by mental application, stooping, the stimulus of wine; and as Dr. Burder remarks, the same degree of cheerful conversation which would chase away, or at least suspend, the feeling of ordinary Head-ache, often becomes laborious and almost insupportable in organic Head-ache.

As the disease advances, turning round suddenly, or any slight movement of the head, increases the pain, and causes giddiness and vomiting; the latter symptom becomes very troublesome, and does not appear to depend on disorder of the stomach itself. At a still later period of the disease, cramps, or spasmodic affections of the limbs, impaired vision or hearing, giddiness, convulsions, palsy, and perhaps imbecility, announce the approach of death.

This affection may arise from various causes, as tumours in the substance of the brain or adhering to its membranes; or formations of bone, from syphilis or some unknown cause, attached to the inner surface of the skull; softening of the brain, tubercles, cancer, &c.

TREATMENT. The treatment here must depend on the circumstances of the case: if there be determination of blood to the head, repeated local bleeding, by cupping or leeches, should be had recourse to, and it may be necessary to take blood from the arm. A seton should be placed in the nape of the neck, and blisters behind the ears. If there be reason to suspect that the disease has originated in syphilis, half a grain of the *iodide or hydriodate of mercury*, with *decoction of sarsaparilla*, should be given daily, until the mouth become slightly affected. The *iodide or hydriodate of potash* has been very serviceable in many cases of organic Head-ache. Low diet and rest, both bodily and mental, are indispensable in every case.

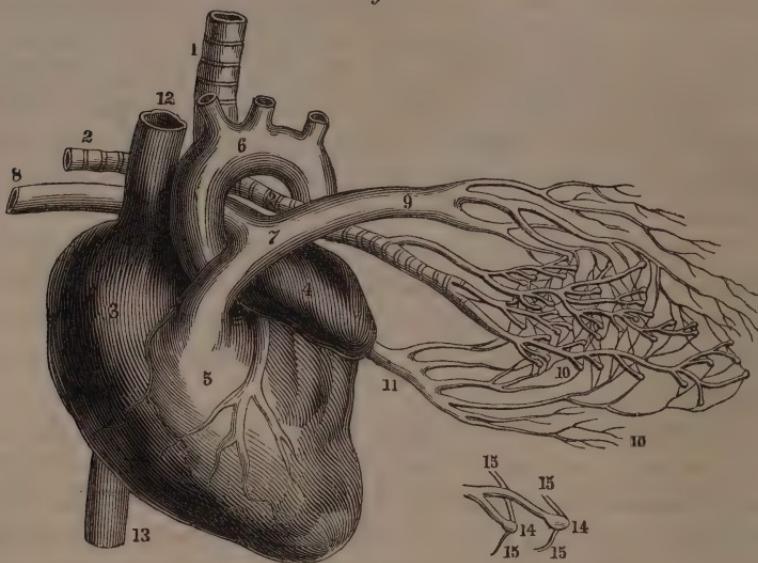
HEART, MECHANISM OF.

MECHANISM OF THE HEART. When we consider the complicated structure of the Heart, its constant action, from the hour of birth to the hour of death, and its intimate connexion with all the parts of the human frame, which unceasingly receive from it the elements of life, we cannot wonder that the Heart should be subject to a great number of diseases, or to frequent disturbance

of action. But before we commence an account of the diseases of the Heart, it may be well to offer a brief description of its mechanism and functions.

The Heart is a hollow muscle, of a conical shape, placed beneath the ribs, on the right side of the chest; the *base*, or thick

Fig. 1.

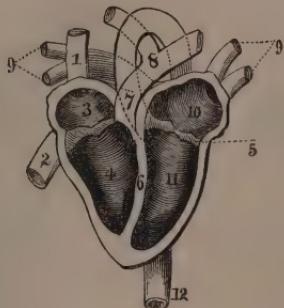


- 1. The trachea or windpipe.
- 2. The bronchi or air tubes.
- 3. Right auricle.
- 4. Left auricle.
- 5. Origin of the pulmonary artery from right ventricle.
- 6. The aorta, arising from left ventricle.
- 7. Pulmonary artery, dividing into
- 8. Branches for right and left lungs.
- 9. Mode of termination of small vessels and air tubes in lungs, better seen in 14 and 15.
- 10. One of the pulmonary veins.
- 11. Superior vena cava.
- 12. Inferior vena cava.

part of the cone being upwards, while the point or *apex* is directed downwards and forwards, inclining a little to the left side, so as to strike between the fifth and sixth ribs, about four inches from the breast-bone: it is enclosed in a strong fibrous case or bag, called the *pericardium*, which admits of free motion, while it serves to protect the Heart, to keep it in its place, and to separate it completely from the surrounding parts: the inner surface of this bag is lined with a thin, smooth membrane, (the *serous*,) which is also continued over the external surface of the Heart itself.

The Heart is divided by a muscular wall or partition, into two distinct parts; the partition runs from the base to the apex, and

Fig. 2.



1. Superior vena cava, which conveys the blood from the head and upper extremities to the right auricle.
2. Inferior vena cava, which conveys the blood from the belly and lower extremities to the same auricle.
3. Cavity of the right auricle.
4. Cavity of the right ventricle.
5. Valve between auricle and ventricle.
6. Partition between the two sides of the heart.
7. The pulmonary artery, dividing at 8, into two branches.
9. The pulmonary veins.
10. Left auricle.
11. Left ventricle.
12. The aorta.

thus separates the hollow muscle into two cavities, (*ventricles*,) (Fig. 2, No. 4 and 11,) which have no communication with each other; the right cavity (or *ventricle*) sends the blood to the lungs; the left ventricle distributes the blood to all parts of the body. At the upper part of the Heart there are two small appendages, called *auricles*, (Fig. 2, No. 3 and 10;) these receive the venous and pulmonary blood, and when they contract, force it into the corresponding ventricles, through two narrow openings: at each opening there is a fold of membrane which serves the purpose of a *valve*, and prevents the blood regurgitating from the ventricle into its corresponding auricle when the heart contracts.

Thus the Heart is distinguished into two sides, the right and left; and each side is composed of two parts, an auricle and a ventricle. The right auricle is a small muscular bag, which receives the venous blood from the body, by the superior and inferior cavæ veins, (Fig. 1, No. 12 and 13,) and sends it through the opening already noticed, into the right ventricle, whence it is driven through a large artery (the *pulmonary artery*) into the

lungs: the left auricle receives the blood from the lungs by the pulmonary veins, (Fig. 2, No. 9 9,) then sends it into the left

Fig. 3.



A section of the aorta, the left auricle and left ventricle. The two white curved lines (*a*) represent semi-lunar valves.

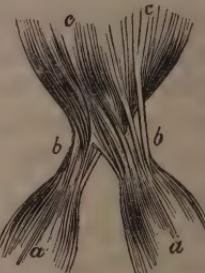
ventricle, and from the latter it is forced through a large artery, called the *aorta*, (Fig. 1, No. 6,) to all parts of the body. At the points where the pulmonary artery and the aorta arise from the right and left ventricles, there are placed three small valves, (*the semi-lunar valves*,) of a crescentic shape, which prevent the blood from being thrown back upon the Heart, when it has passed into the great vessels that are destined to distribute it to the body. The Heart then, is an instrument composed of two pumps placed side by side, but independent of each other; the two auricles are reservoirs, whence the venous blood of the body, with the blood which has passed through the lungs, is forced into the ventricles; the ventricles again, are complete muscular pumps, by which the blood is distributed to the lungs and to all other parts of the body. The valves of the Heart are like the valves of a common

Fig. 4.



This figure represents one of the valves between an auricle and ventricle, when open.
a a, Fleshy fibres of the heart which move the valve *c*. *b b*, Tendinous chords of the fleshy fibres.

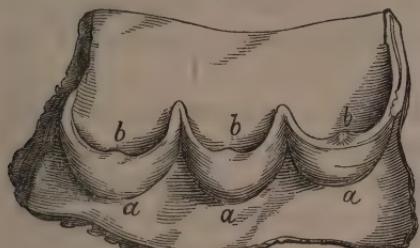
Fig. 5.



This cut represents the same valve, when shut.
a a, Fleshy fibres.
c c, Valve.
b b, Tendinous chords.

pump, but their structure and mechanism are much more delicate and complex; their evident use is to prevent the blood which is

Fig. 6.



Aorta cut open at its origin, to show the semi-lunar valves. *a a a* Convex sides of valves attached to aorta. *b b b*, Crescentic, free edges of the valves.

Fig. 7.



Transverse section of the aorta, just below the valves, showing how they close up the vessel, to prevent the reflux of blood.

received into any cavity from being driven back during the heart's contractions, upon the cavity from which it came.

By the term *circulation* of the blood, we mean the course which the blood takes when it passes from one side of the Heart, through the lungs or the body, to gain the other side. As there are two distinct compartments or pumps in the composition of the Heart, so there are two circulations of the blood. The smaller, or *pulmonary circulation*, is effected by the right side of the Heart; the blood in the right auricle is driven into the right ventricle; from the latter it is driven through the pulmonary artery into the lungs, and from the lungs it is conveyed by the pulmonary veins into the left auricle; thus is completed the smaller or pulmonary circulation, the object of which is to expose the blood to the action of the air in the lungs, where it undergoes certain changes, which are necessary for the continuance of life. When the blood has arrived in the left auricle from the lungs, it is driven into the left ventricle, whereon the latter immediately contracts and forces the blood into the *aorta*: this artery is a large tube, which conveys the blood to all parts of the body, gradually breaking up into smaller and smaller vessels, until it ends in the *capillaries*, or minute arteries; from the capillary arteries the blood is carried into the veins, and by them it is conveyed into the right auricle of the Heart; thus is completed the greater or aortic circulation of the blood. We should not omit to mention that the two auricles contract together, and that the two ventricles also expel their contents, by contracting at the

same time; hence, while the venous blood from the right side of the heart is passing through the lungs, the arterial blood from the left side is circulating to all organs and parts of the body, and this double circulation of the blood takes place from sixty to seventy times a minute during the whole course of our existence.

From the preceding very brief sketch of the mechanism of the Heart, it can readily be understood why so complex a piece of structure should be subject to various derangements; and the more particularly so, when we reflect that its action is unwearied, from the instant of our birth to that of our dissolution. Every other organ has a period of rest, but the Heart is unceasing in its movements, and knows not of repose; hence, in very old people, the organ sometimes appears as if it were actually worn out; the most delicate parts lose their suppleness, and become unfitted for constant motion, and life ceases, not so much in consequence of actual disease, as because the central organ of life is no longer capable of performing its functions.

DISEASES OF THE HEART. The fibrous membrane of the Heart, (*pericardium*,) its serous lining, or the substance of the Heart itself, may be attacked by inflammation. The medical man might, perhaps, with very great attention, be able to distinguish them from each other; but for all practical purposes, it will be sufficient to describe them together under the term *Inflammation of the Heart*.

This disease may be caused by blows upon the chest, by the extension of inflammation from surrounding parts; but the public should be well aware that its most frequent cause is *rheumatism*. It is now fully proved, that persons liable to acute rheumatism are very frequently attacked by inflammation of the Heart; so much so, indeed, is this the case, that a celebrated physician thinks that *one* out of every *three* rheumatic patients, labours under an inflammatory affection of the Heart.

SYMPTOMS. Although the Heart be such an important organ, and, as it were, the very centre of life, yet its inflammation is not shown by any very clear or positive symptoms; the Heart, in fact, seems to bear inflammation without suffering much, a circumstance which we must regard as very providential, otherwise life would be suddenly cut short, or existence rendered miserable,

by the frequent inflammatory disorders to which this, the main-spring of life, is so liable. The symptoms of Inflammation of the Heart will vary much according to the severity and extent of the disease; the principal signs by which it may be recognised are fever, with pain about the region of the Heart; the pain generally shoots through the chest to the back, underneath the shoulder-blade, and is much increased when we press the fingers over the Heart, or push up the contents of the belly, towards the point of the Heart. The breathing is hurried, and a dry cough torments the patient, who is unable to lie on the left side. The beating of the Heart is generally strong, and extends over a considerable part of the chest; the pulse is full, and gives a bounding feel under the finger. As the disease advances, the palpitation of the Heart is less evident, because fluid has now been poured out into the fibrous bag or *pericardium*, but the anxiety and difficulty of breathing increase. If the region of the Heart be carefully examined, a puffiness or swelling will be perceived between the ribs; the pulse becomes quick, weak, and fluttering; the features are contracted, the face gets swollen or livid, and the patient is cut off in a few days, or may linger on for two or three weeks.

In very many cases Inflammation of the Heart is not attended with such evident symptoms, but we may suspect its existence if the patient, after having suffered under rheumatic fever, complains of a load or fulness about the Heart, with dull pain, restlessness, anxiety, and occasional palpitation.

TREATMENT. To subdue an inflammatory disease of the Heart, the most active measures should be employed without a moment's delay. When the fever runs high, the pain is severe, and the anxiety very distressing, the patient should be immediately bled, until a sense of faintness is produced; after which, from fifteen to thirty leeches are to be applied over the region of the Heart, and again put on, if the pain and palpitation are not considerably reduced. After general and local bleeding, which must be regulated according to the patient's strength and the severity of the disease, we must give tartar emetic, in the way recommended at page 76, No. 55; and the bowels should be acted upon, twice a day, by the pills, (No. 109, or 110, page 175,) assisted by a *black-draught*, (see page 32,) or by a clyster com-

posed of an ounce of Glauber's salts, dissolved in a pint of warm water. The patient should abstain from all food, and take any cool drink, to each quart of which may be added four scruples of the *supertartrate*, or two scruples of the *nitrate of potash*. The above measures are intended to check the inflammation, but it can rarely be subdued entirely by them; we must therefore have recourse to *mercury*, as soon as the violence of the disorder has been mitigated; five grains of *calomel* or ten grains of *blue pill*, should be given thrice a day, until the gums begin to show that the medicine has taken effect. When pain and restlessness continue in a late stage of the disease, the pain may be alleviated by two or three *blisters* applied over the Heart in quick succession, and for the restless state of the patient, which is often very distressing, we may give a draught containing twenty drops of *tincture of hyoscyamus*, with the same quantity of *tincture of digitalis*, in four ounces of water.

When the inflammation continues for many weeks after its violence has been completely subdued, or when it has been of an obscure and slow nature from the commencement, the treatment may be of a less active kind, but it must be pursued with great perseverance, and for many weeks, or even months, before a cure can be obtained. Six or eight *leeches* must be occasionally applied over the region of the Heart, and in the intervals one or two *blisters* may be applied, or the skin irritated with the *tartar emetic* ointment, (page 26, No. 15.) The patient should take, at bed-time, five grains of the *extract of hyoscyamus*, to procure rest, (or even ten or fifteen grains if necessary,) and the bowels should be kept regular by any mild laxative, as five grains of *blue pill*, or of the *compound colocynth pill*, administered two or three times a week.

ENLARGEMENT OF THE HEART. It is a well-known fact, that when a muscle is much used, it gradually increases in bulk and strength. The same principle applies to the Heart, which is merely a hollow muscle; whenever any obstruction exists to the free passage of blood from the Heart, or whenever the organ is excited to violent efforts, either through mental emotions or bodily actions, (as running, rowing, &c.) the muscular substance of the Heart may gradually increase in bulk, until it becomes three times as large as it should be. The symptoms of *enlarged Heart*

are usually very decided. The first sign is a constant palpitation, evidently arising from the increased size and force of the Heart; the organ beats powerfully against the ribs, and its pulsation is felt over a large portion of the chest. This palpitation may continue for some time without any other symptom, but other effects are sooner or later felt; the face becomes florid and afterwards purplish, because more blood is driven into the small vessels of the cheeks; the patient often complains of "a rushing of blood to the head," ringing in the ears, &c., because the blood is forcibly driven into the vessels of the brain; there is a dry, hacking cough, with fits of suffocation, from congestion of blood in the lungs; and from the same reason, the patient is sometimes seized with a violent spitting of blood, because some of the blood-vessels in the lungs have been burst by the violent pumping action of the Heart; as the enlargement of the Heart becomes greater, the palpitation seems to abate, because the Heart has less room to beat in its fibrous bag; but the suffocation increases, the extremities become infiltrated with fluid, and the patient either dies of dropsy in some cavity, or is cut off by a fit of apoplexy, or by spitting of blood.

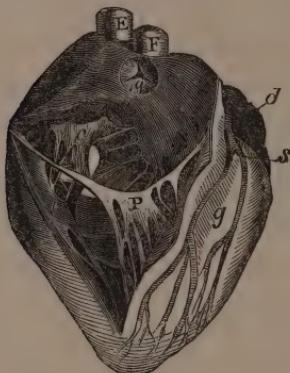
TREATMENT. The treatment of Enlargement of the Heart is to be conducted upon principles which are very easily understood: the Heart is too strong; we must therefore endeavour to lessen its force, and to avoid any excitement which may bring it into action. The patient must observe a very strict diet, eat nothing but white meats in small quantities, and abstain totally from beer, porter, wine, or spirituous drinks. Any exercise which is taken should be of the very easiest kind. To diminish the force of the Heart, four, six, or eight ounces of blood must be taken from the arm every four or six weeks, (according to the patient's strength,) until the palpitation and suffocation are relieved; and when blood-letting has been carried as far as prudence will admit, the bowels must be moved two or three times a day by Epsom salts. When symptoms of dropsy have come on, or it appears that the patient will not bear the loss of blood, elaterium should be given, (see page 227, No. 158,) so as to produce three or four watery stools in the twenty-four hours. The dropsical effusion will also be relieved by the constant use

of remedies which increase the discharge of urine. (See *Dropsy*, page 227.)

The patient must, in all cases, make up his mind to pursue this treatment steadily, until the disease has been completely subdued; and after a cure, to avoid all violent exercise, mental emotions, or other causes which are calculated to increase in any way the action of the Heart.

DISEASE OF THE VALVES OF THE HEART. We have already mentioned that the communications between the auricles and ventricles, (Fig. 7, o,) and also that the points where the two great arteries of the Heart (*pulmonary* and *aorta*) arise from the ventricles, (Fig. 7, q,) are furnished with valves. The use of these valves is to favour the circulation of the blood, by preventing it from passing backwards from a ventricle to an auricle, or from a main tube to its corresponding ventricle. The valves, then, play a very important part in the functions

Fig. 7.



- | | |
|---|----------------------|
| E. The aorta. | g. Semilunar valves. |
| F. The pulmonary artery. | d. Left auricle. |
| o. Valve between right auricle and ventricle. | g'. Left ventricle. |
| P. Fleshy fibres which move the valve. | s. Coronary artery. |

of the Heart, but they are sometimes diseased; instead of being supple and easily applied against the sides of the Heart, they occasionally are loaded with bony matter, or are encumbered with warty excrescences. The effect of this is to present a mechanical obstruction to the circulation of blood, either by rendering the openings smaller than they should be, or by

preventing the valves from opening and closing with suitable facility and accuracy. The general symptoms of disease of the valves are cough, with fits of suffocation, terminating in the spitting up of a watery fluid, or of mucus mixed with dark blood; occasional discharges of blood from all the mucous membranes; lividity of the face; general dropsy, and congestion of blood in the brain. In addition to these, there are particular symptoms, which depend on the part of the Heart affected. The action of the Heart is irregular, and the pulse is sometimes feeble or intermitting. In some cases, while the Heart beats violently against the chest, the pulse at the wrist is found to be small and weak; this affords a strong presumption that disease of the valves exists, because we can see the Heart labouring to expel its contents, while the pulsations of the tube, through which the blood should flow, indicate by their weakness that but little blood is driven into it; hence there must be some obstruction near that end of the tube (see the figure) which is joined to the Heart. The pain attending valvular disease of the Heart is of a peculiar kind, resembling that which occurs in *angina pectoris*, (see *Angina*.) There are few diseases in which sudden death takes place more frequently than in valvular disease of the Heart. It therefore becomes us, if we have any suspicion that such a disease exists, "to set our house in order" at once, and to be prepared, both in a worldly and spiritual point of view, for sudden dissolution.

TREATMENT. When the valves of the Heart are diseased, we know of no means by which the valvular obstruction can be removed; our efforts must, therefore, be directed towards mitigating its effects. These are obstructed circulation of the blood, and the various symptoms which we have already mentioned under "Enlargement of the Heart." The treatment is precisely the same as for the latter disease. The patient must submit to absolute repose; to relieve the palpitations and suffocation, four or five ounces of blood may be drawn from the arm occasionally; and the removal of the dropsical fluid is to be favoured by diuretics and purgatives, in the way before described; we should, however, always bear in mind, that as the disease is an incurable one, our remedies should be employed with much caution, and that bleeding and purging, &c., should not be carried further than is necessary for the relief of the more urgent symptoms.

NERVOUS DISEASE OF THE HEART. From the connexion between the Heart and all parts of the human frame, the Heart is very subject to disturbance of its action, not depending on organic disease, but on certain impressions conveyed to it from distant parts through the nervous system. The only symptom of this nervous disturbance to which we need allude is *palpitation*. It is of great importance to distinguish *nervous palpitations* of the Heart, from palpitations which depend on derangements of the Heart's structure, (*organic*,) because the former, although they excite considerable anxiety and alarm in the patient's mind, are completely under the control of medical treatment. *Nervous* palpitation may be distinguished from *organic* palpitation by the following circumstances: nervous palpitation is apt to come on more particularly when the patient is lying awake in bed, at the beginning of the night; it is not rendered worse by moderate exercise, but is rather relieved by it; whereas, *organic* palpitation is necessarily increased by any corporeal exertion, however slight; nervous palpitation is often accompanied by other nervous symptoms, and whenever the latter are increased, the palpitation becomes increased with them: finally, in nervous palpitation, there is generally some *intermission*, that is to say, the patient is free from it at certain times, during which the pulse and heart beat quite naturally, while in *organic* palpitation, there is hardly ever any cessation of this distressing symptom, because the diseased structure upon which it depends is *constantly* irritating the Heart, and compelling it to act with violence.

Nervous palpitation commonly occurs in men of nervous temperament, who have been rendered more irritable by the too free use of ardent spirits, by excessive venery, long study, or the depressing passions. It often attacks persons who are much addicted to smoking tobacco, or have frequently suffered from indigestion. In women this affection generally depends on green-sickness, (*chlorosis*,) or hysteria; it may also be connected with excessive loss of blood.

TREATMENT. As nervous palpitation is merely a symptom of some other disorder, its treatment must be subordinate to that of the disease upon which it depends; to prevent repetition, therefore, we would refer our readers to the articles on Indigestion, Green-sickness, Hysterics, and Nervous Disorders, &c.

The first point in the treatment will naturally be to remove, if possible, the cause of the symptom. Excesses of all kinds must be avoided; the patient should take gentle exercise in the open air, and regulate his diet with great attention; when the palpitation seems to depend on a very irritable and nervous temperament, change of air, sea-bathing, and the enjoyment of rational amusements, will have much effect in quieting the Heart's action; after which a course of mineral waters may be tried with advantage. When the palpitation is very distressing at night, it may be necessary to give some medicine which will quiet the patient, and afford him relief, until the other remedies that we are employing have time to produce some effect. From one to two grains of the *acetate of morphia*, may be given in a pill, with crumb of bread; or the following draught may be taken two or three times a day, according to necessity.

No. 222.

Tincture of hyoscyamus, half a drachm,
Spirit of nitric æther, half a drachm,
Syrup of orange peel, one drachm,
Camphor mixture, ten drachms.

HEARTBURN, OR WATER-BRASH.

Heartburn, though not attended with danger, is often very difficult of cure. It occurs most frequently among poor people, is seldom met with before the age of puberty, and not often in old people. Females are more subject to it than males, and some women suffer from it only during pregnancy. This affection is very common in Scotland and other northern countries, where it appears to arise, in many cases, from the use of oaten cakes, porridge, and other preparations of oatmeal. It is often caused by eating fat or oily substances, cheese, or some particular article of food which disagrees with the stomach, and in general is merely a symptom of indigestion. It may arise from exposure to cold, sitting with wet feet, or from any sudden mental emotion; and in some individuals it cannot be traced to any cause.

The symptoms are a burning sensation, attended with a feeling of constriction at the stomach, which, after continuing some

time, is followed by frequent belching of a thin fluid, sometimes exceedingly sour, at other times insipid. The attack may come on at any period of the day, and may continue during several hours: in some people it comes on daily for weeks or months; in others it occurs only occasionally, in consequence of indulging in some article of diet difficult of digestion. Heartburn sometimes accompanies organic disease of the stomach or liver.

TREATMENT. When Heartburn comes on only occasionally, it may be relieved by means of a teaspoonful of *carbonate of soda*, or the same quantity of *magnesia*, taken in a little water; but when it recurs frequently, and becomes very troublesome, more active treatment should be resorted to. In some cases, however, it is protracted through a period of many months, uninfluenced by any medical treatment which may be adopted. The *sub-nitrate of bismuth*, in conjunction with the *extract of henbane*, taken as directed at page 52, is the remedy which we are in the habit of prescribing, and is, perhaps, the best that can be used in this complaint. Dr. Baillie recommended a drachm of the *compound tincture of benzoin*, mixed with *mucilage of gum arabic* and water; but he was of opinion that no remedy possessed much influence in subduing Heartburn. Two eminent physicians, Cullen and Mason Good, have spoken in high terms of the internal use of *Castile soap*, which may be taken in combination with *rhubarb*, as follows.

No. 223.

Castile soap, two drachms,
Rhubarb, and

Ipecacuan, in powder, of each two scruples. Mix with mucilage, and divide into forty pills; two of which may be taken twice a day.

The state of the bowels must continue to be an object of attention as long as this affection exists. The most suitable laxatives are those which produce a feeling of warmth in the stomach, as Gregory's powder, (page 48,) or any of the following forms of opening medicine.

No. 224.

Peppermint or cinnamon-water, two ounces,
Rhubarb, fifteen grains,
Carbonate of ammonia, five grains,
Tincture of ginger, or of cardamoms, twenty drops. Mix. To be taken as a dose, and repeated, if necessary, in the course of the day.

No. 225.

Compound decoction of aloes, an ounce,
Compound tincture of rhubarb, two drachms,
Carbonate of soda, fifteen grains. Mix. To be taken as a dose.

No. 226.

Aloes, three drachms,
Mastich, and
Conserve of red roses, of each a drachm,
Extract of ox-gall, a drachm and a half. Mix well, and divide into a hundred pills; two or three of which are to be taken every day after dinner.

These dinner pills are called *Frank's Grains of Health*, and have been long in very general use.

It is almost unnecessary to mention that the diet should consist of plain animal food, and that farinaceous substances, likely to ferment, should be very sparingly used. Weak brandy and water will be found, in most cases, preferable to wine or malt liquor. (See *Indigestion*.)

HECTIC FEVER.

In this species of fever the patient is attacked daily, between five and six o'clock in the afternoon, with rigors or shivering, which continues from a quarter of an hour to an hour, and is followed by quick pulse, hot skin, thirst, and restlessness: but delirium is not a symptom of this affection, and head-ache only occasionally occurs. Profuse sweating breaks out about ten or eleven o'clock, which relieves the patient, who then falls asleep, and on awaking, about five or six in the morning, finds himself bathed in perspiration. There is also another attack about noon, which is slight, and sometimes not attended with shivering. Indeed, Hectic Fever, when it has continued some time, and is completely formed, never ceases entirely, inasmuch as the pulse beats at least ten strokes in a minute more than it would do in a state of health; and in this respect differs from ague, in which there is a complete intermission.

The pulse is always quick, varying from a hundred to a hundred and twenty, and sometimes it reaches a hundred and forty. "Almost from the first appearance of the hectic, the urine is high coloured, and deposits a copious branny red sediment,

which hardly ever falls close to the bottom of the vessel." The appetite is at first very little or not at all impaired, but gradually gives way as the patient's strength diminishes; the tongue is red and clean; the face is pale in the morning, but towards evening, when the feverish symptoms commence, a circumscribed redness appears on the cheeks, called *hectic-flush*; and the white of the eyes has a delicate pearly tint.

The patient becomes weak and emaciated, the cheeks are hollow and sunken; the face is long and thin, and the eyes appear sunk in their orbits. Purging comes on at last, and this, with the excessive perspiration during the night, rapidly reduces the patient's strength, and he dies completely exhausted. (See *Pulmonary Consumption.*)

Hectic Fever may arise from irritation, or slow inflammation, of any part or structure of the body, associated with debility, or, as it is sometimes termed, a broken-down constitution; or it may be caused by the fluids of the body becoming corrupted, in consequence of the absorption of morbid matter (pus.)

TREATMENT. Hectic Fever being generally, if not invariably, symptomatic of some other disorder, the means of cure must of course have direct reference to the morbid state of the organ or part with which the fever is associated: we must, therefore, refer the reader to treatment directed for the diseases on which it depends.

HEMLOCK. (*Cicuta, Conium Maculatum.*)

This is a well-known indigenous plant, found growing in ditches, on the banks of rivers, and in waste places. It flowers in July, and early in August, and is distinguished from plants which resemble it in appearance, by the spotted stem.

We are indebted to the Baron Stoérck for having investigated the effects and established the use of this powerful and valuable remedy; and to the learned Dr. Christison, of Edinburgh, for an able and interesting memoir, (Transactions of the Royal Society of Edinburgh, vol. 13,) which contains all the information known on the subject.

The extract of Hemlock, taken in moderate doses, acts on the system in a similar manner to henbane and aconite; and, like

those remedies, is also narcotic and sedative, without producing any stimulant effect.

The diseases in which it is principally employed are cancer, syphilis, scrofula, rheumatism, and inflammatory or spasmodic affections of the urinary organs. It has also an excellent effect in allaying the cough at the commencement of pulmonary consumption; and if judiciously used, may have the effect of retarding the progress of that disease for years.

When henbane, aconite, and belladonna, lose their influence, Hemlock may be substituted with advantage in all the diseases in which those remedies are employed.

Externally, a fomentation of the leaves of Hemlock is used for the purpose of soothing the pain of cancerous and scrofulous ulcers. At St. Bartholomew's Hospital, the fomentation is made with two ounces of the fresh leaves to a pint of water; or, three ounces of the dried leaves are to be boiled down in three pints of water to a quart. In the same affections, the following *lotion* has been found very serviceable.

No. 227.

Extract of hemlock, three drachms,
Lime-water, two pounds. Mix.

The dose of the *tincture* of Hemlock is from fifteen drops to a drachm, and of the *extract*, from two to six grains, three times a day. The dose of this and all other narcotics requires to be gradually increased. Head-ache, slight giddiness, and sensation of tightness across the forehead, indicate that the dose has been carried as far as can be done with safety; and these effects will be relieved, in a very short time, by taking a little warm brandy and water.

It has been a question of considerable interest among scientific men, whether the Hemlock of this country is the same as that which was used by the Greeks as their state poison. Dr. Christison is of opinion that it is not the same as the plant which was employed to destroy Phocion and Socrates.

HENBANE. (*Hyoscyamus.*)

Henbane grows wild in many parts of Great Britain; is found principally on waste lands, where the soil is calcareous, and flowers in July.

All parts of this plant are poisonous, and accidents have frequently occurred from mistaking its root for that of parsnip, to which it has a strong resemblance.

Henbane, though well known to the ancients, was seldom employed in later times, until the Baron Stoérck, of Vienna, in 1762, pointed out the great advantage to be derived from it, as a narcotic, in cancer, and other painful disorders. Its value as a narcotic is now well established, and, next to opium, it is considered the most useful remedy of this class. Indeed, in many cases, it has a great advantage over opium, inasmuch as it possesses no stimulating principle; or, in other words, is directly sedative and narcotic; hence in all inflammatory affections, where it is found necessary to administer an anodyne or soporific, this remedy will have the effect of tranquillising the patient, without producing the least excitement; whereas opium, on the contrary, from its stimulating action, would tend to increase the restlessness, and aggravate the inflammation. Henbane has also the advantage of being divested of the constipating property which opium possesses, and has a tendency rather to open the bowels than otherwise. It seldom produces head-ache, which opium very frequently does.

Both the extract and tincture of Henbane are now much used for the purpose of allaying local irritation or morbid sensibility, where opium could not with propriety be given, on account of its secondary unpleasant effects on the brain and nervous system. These preparations are of great service in painful and irritable disorders of the urinary organs. In chordee, and in the inflammatory stage of gonorrhœa, which is often attended with great pain in voiding urine, and an urgent and frequent desire to evacuate the bladder, the tincture of Henbane, in doses of ten or twelve drops, in barley-water, taken every half hour, has an excellent effect in soothing the pain and relieving the distressing irritation. In these disorders Mr. Benjamin Bell, of Edinburgh, introduced the practice of combining the extract with camphor,

in the proportion of two grains of the former to three grains of the latter, to which he sometimes added a grain of the powder of ipecacuan root.

We have already had occasion to mention the benefit to be derived from this remedy in relieving indigestion arising from irritability or functional derangement of the stomach. (See page 47.)

A poultice made with the fresh leaves of Henbane, or a watery solution of the extract, is often very serviceable in allaying the pain of irritable ulcers, or of scrofulous and cancerous sores.

The dose of the extract, in chronic disorders, should not be less at first than two grains three times a day, which may be gradually increased to five or six grains. When intended as a soporific, in acute affections, the dose may be from five to ten grains at bed-time. The dose of the tincture is from twenty drops to a drachm. The effects of an over-dose of Henbane are similar to those produced by aconite, (see page 6.) It ought to be remarked that the extracts of Henbane, aconite, and hemlock, commonly found in the shops, are often inert, and may be taken in almost any quantity; hence many practitioners prefer the tinctures of these plants, as preparations more to be depended upon.

HICCUP.

By this term is meant a spasmodic or convulsive motion of the stomach, and muscle called the midriff, (*diaphragm*,) which divides the chest from the abdomen.

This affection usually arises from eating a too full meal or highly seasoned food, drinking cold fluids, wind, acidity, and similar causes, particularly when the stomach is predisposed to it from debility. When arising from simple causes of this description, it is of little consequence, and seldom continues long; but when it comes on in a far advanced stage of fevers, and internal inflammatory diseases, a fatal termination may soon be expected.

TREATMENT. In ordinary cases Hiccup ceases of its own accord, or may easily be checked by drinking a little cold water; by a sudden excitement of some degree of surprise, fear, or any other strong mental emotion; by swallowing a small quantity of vinegar, lemon juice, or some other strong acid; and when it

occurs after a full meal, every body knows that a little brandy generally puts a stop to it.

When Hiccup is symptomatic, the treatment must depend entirely on the nature of the disease under which the patient is labouring.

Opium, henbane, and similar narcotic medicines, are generally administered to palliate the distressing Hiccup, which so frequently comes on when fevers and inflammatory diseases are about to terminate fatally.

HOOPING-COUGH, OR CHIN-COUGH.

This is a very frequent disease amongst children, but it rarely occurs before the first two months, or after the age of puberty. It is difficult to say upon what the peculiar convulsive nature of the cough depends; this much, however, we know, that it is sometimes contagious, and often spreads epidemically from one district to another, or even throughout an entire kingdom. The *peculiar* symptom by which Hooping-Cough may be readily distinguished from all other kinds of cough, is the hooping sound from which it derives its name.

The disease sometimes attacks children suddenly, and without giving any warning; but it generally happens that the child suffers under common cough for a week or two before the convulsive fits of coughing begin to show themselves. The first circumstance noticed about the child is, that the fit of coughing is more protracted than it was wont to be; there is a kind of hitch in the cough, which is peculiar, and this soon passes into the regular fit of Hooping-Cough. The latter consists in a convulsive action of the muscles of respiration, combined with common cough: after a few moments the nature of the cough begins to change; the air is driven violently through the wind-pipe by short quick efforts, until the child's face and neck become swollen to such a degree that a by-stander might think suffocation was imminent: these efforts are followed by two or three inspirations, during which the air is as violently sucked in through the constricted opening of the wind-pipe, and produces the *hoop*; in this way the fits of coughing succeed each other more or less rapidly, and are continued for a longer or shorter time, according

to the severity of the disease, until they terminate in vomiting, or the spitting up of a thick frothy mucus from the lungs. When the convulsive efforts, during a fit of Hooping-Cough, are mild, the child suffers but little from the attack, and soon returns to his ordinary amusements; but if the fit be severe, the blood is often driven to the head with such violence, that it rushes from the nose or ears, or renders the eyes completely blood-shot, from rupture of small vessels in the white of the eye; these circumstances should not cause alarm, for they are not attended with any immediate danger. The number of fits is extremely variable in different cases; sometimes the child will have only three or four during the day; at other times they come on as often as every quarter of an hour, and are particularly annoying during the night. The convulsive coughing may last for three or four weeks, or even longer, when it begins to decline; the fits get less violent; the mucus is spit up from the lungs in greater quantity, and the disease gradually wears itself out in five or six weeks.

Such is Hooping-Cough in its simple and mild form; but in many cases the disease, either from its violence, or from certain tendencies of the patient to disease of the head or chest, becomes attended with very great danger to life. The danger is, in general, proportioned to the tender age of the infant, its constitutional powers, and the organ which may be attacked during the course of Hooping-Cough: thus infants are more liable to be cut off by this disease than children; weakly children run greater risks than those who are strong; and much greater danger is to be apprehended when the head is attacked, than when the lungs only become involved in the consequences of the disease.

Our chief object, then, is to watch the progress of Hooping-Cough carefully, and be prepared for the occurrence of any dangerous symptoms about the head or chest; to these we shall now direct attention, because they are the most important points connected with the disease; for when Hooping-Cough is simple it is rarely attended with any danger, and would wear itself out in the end.

Infants under seven months of age, and children at the time of cutting their teeth, are liable to affections of the head during the convulsive stage of Hooping-Cough; at other periods children are more subject to inflammation of the lungs. Sometimes the

affection of the head is a true acute dropsy of the brain, indicated by its peculiar symptoms, (see *Dropsy of the Brain;*) but much more frequently, (and this is chiefly the case in infants,) the dangerous symptoms depend on congestion of blood within the head, which gives rise to convulsions, or to an effusion of water, without inflammation. This latter accident is extremely dangerous; it is indicated by the child's getting gradually drowsy; by a peculiar listlessness and apathy; by a dropping of the eyelids; dilatation of the pupils, and convulsive movements of the face, or clenching of the fingers and toes: there is no fever to indicate this highly dangerous state, which often makes a fatal progress before it is perceived or checked.

In some other cases the congestion of blood within the head gives rise to convulsions, or to various grades of irritation of the brain. The convulsions may come on suddenly, but in most cases their threatening is shown by the livid appearance of the countenance after each fit of coughing; by the smothered tone of hoop, while the fits of cough are very severe, and by clenching of the fingers. The various degrees of irritation within the head are indicated by an irritable state of the child, screaming during sleep, grinding of the teeth, occasional head-ache, with flushing of the face; in a word, with some or all of the symptoms which point out the *premonitory* stage of acute dropsy of the brain, (see page 239.) We cannot, therefore, too often repeat our caution to persons who have the care of children, to watch these symptoms with the utmost vigilance, and to combat them when they appear, with the most persevering energy.

In children beyond the age of twelve months Hooping-Cough is much more liable to excite inflammation of the lungs than disorder within the head. This was clearly pointed out by Dr. Hennis Green, who, indeed, has also shown us, contrary to the generally received opinion, that diseases of the chest are much more frequent amongst children than diseases of the head. The extension of inflammation to the lungs is generally shown by the existence of fever, with quick pulse, and hurried difficult respiration; and it will be a safe rule to lay down, that whenever the pulse begins to rise beyond eighty and the respiration beyond thirty, we should suspect inflammation of the lungs. The state of the breathing is a much better guide than either the pulse or

the heat of skin, for the inflammation is often of the kind which Dr. Green has named *lobular*, (i. e. confined to small points of the lungs,) and does not produce much fever until long after it has commenced. As the disease advances the breathing becomes quicker and more difficult, while the fits of coughing diminish; the nostrils are seen working with the exertions made to admit air into the lungs; the face exhibits a light purplish tinge, and a loud wheezing noise is heard, from the air passing through the mucus, which collects in great quantities in the air-passages or bronchial tubes. The existence of inflammation of the lungs is now placed beyond a doubt.

TREATMENT. We have just shown that Hooping-Cough may be *simple* or complicated with some affection of the head or chest. *Simple* Hooping-Cough does not require any active treatment; it will generally wear itself out in five or six weeks, and many medical men are decidedly of opinion that remedies have very little effect in cutting it short. During the first stage the treatment applicable to common cough, (see *Bronchitis*,) will be sufficient; the only precaution necessary is to watch the state of the head and lungs; and if any symptoms of congestion about these organs appear, to apply a few leeches at once, either to the temples or over the breast-bone. When the convulsive stage or hooping begins, we may change our plan to the following one, which will generally be found safe and efficacious. An *emetic* of tartar emetic, or of ipecacuanha wine, is to be given every second or third day, and the bowels should be acted on mildly, three times a week, by small doses of calomel and rhubarb, castor oil, or any other laxative. The emetic will have the effect of facilitating expectoration in a very great degree, and thus preventing any tendency to an affection of the chest; if the cough be extremely violent, the emetic may be given daily, for three or four days running, and then discontinued for a couple of days, when it is to be resumed. Either of the following may be used.

No. 228.

Tartar emetic, two grains,
Syrup, two drachms,
Water, four ounces. Mix. A tablespoonful to be taken every ten minutes, until vomiting is produced.

No. 229.

Ipecacuanha wine, half an ounce,
Syrup, two drachms,
Water, four ounces. A tablespoonful to be taken, as above, until the full effect is produced.

When the emetics have been employed for a week, it will be proper to combine them with some antispasmodic remedy, or to give a diaphoretic mixture, as follows.

No. 230.

Ipecacuanha wine, five drops,
Carbonate of soda, two grains,
Syrup of poppies, half a drachm,
Water, one ounce.

This mixture is to be given every six hours, for several days, the bowels being kept open by a few grains of mercury and chalk, at night. It is suited for children under two years of age.

When the violence of the cough has subsided a little, we must have recourse to some mild tonic, with tincture of belladonna.

No. 231.

Infusion of calumba, two drachms,
Tincture of belladonna, ten drops,
Infusion of valerian, one drachm. Mix. To be taken twice a day.

The extract of belladonna is also frequently used during this stage with the greatest benefit. To begin, one-eighth of a grain may be given twice a day, and the dose gradually increased, until one or even two grains are taken during the course of the day. When the patient is much reduced by the disease, or is naturally feeble, one-half of a grain of oxide of zinc may be added to an equal quantity of the belladonna for a dose. During the use of these remedies the diet of the child should be light, and exposure of the person to cold or damp air must be avoided. As we have already mentioned, however, little danger will accrue unless the head or chest become involved in the disease. When convulsions, or signs of congestion or inflammation of the brain, (see *Convulsions*, and *Dropsy of Brain, Acute*), make their appearance, we must have recourse, without a moment's delay, to the mode of treatment which has been recommended under

these respective heads. If Hooping-Cough, on the other hand, occasions inflammation of the lungs, shown by great quickness of the breathing, quick pulse and fever, we must apply a few leeches to the chest, in case the child be strong and of a full habit; but it should be remembered that, generally speaking, children will not bear to lose much blood, in the inflammations of the chest which come on after Hooping-Cough, measles, or small-pox. The *tartar emetic* mixture, (page 76, No. 55,) may be given, in the dose of two teaspoonfuls, every two or three hours; or two grains of the *Kermes mineral* may be administered every four hours, in a little sugar. The physicians at the Children's Hospital, Paris, speak highly of the *white oxide of antimony*, and the best effects have been produced by it, in doses of ten grains, thrice a day, gradually increased up to thirty grains, until vomiting ensues. The action of antimonial remedies may be aided by *blisters* on the chest, and by the other means noticed under acute bronchitis, (see page 87.) When the mucus collects in large quantities, and seems to threaten suffocation, nothing will relieve the child more than an *emetic*.

In the convulsive stage of Hooping-Cough, it has frequently been the practice to apply irritating embrocations or ointments along the spine or over the chest. The *tartar emetic ointment* was, at one time, much used in this way; but we are of opinion that it should never be employed on children, for it often produces great irritation, or even sores, which are extremely difficult to heal up. It will be more prudent and safe to rub the following liniments over the chest or spine until the skin gets red.

No. 232.

Strong solution of ammonia, half an ounce,
Oil of turpentine, half an ounce,
Olive oil, one ounce.

When Hooping-Cough has been cured, or has subsided of itself, the fits sometimes recur after an interval of a few weeks. Nothing is better suited for such cases than change of air, from crowded unwholesome towns, to the pure and refreshing atmosphere of the country. This beneficial change, together with attention to diet, exercise, and the use of mild tonics, will

often ward off the danger of pulmonary consumption, to which delicate children are very liable after protracted Hooping-Cough.

HYDROPHOBIA.

Hydrophobia arises from a morbid poison, introduced into the system by the bite of a rabid animal. The animals that most frequently communicate this disease are the dog, cat, fox, and wolf; but whether it originates spontaneously in those animals, or is always transmitted from one to another, is unknown. It has been ascertained that the ox, sheep, and it is to be presumed, herbivorous animals generally, cannot communicate the disease from one to another, nor to other species of animals; but it is not known whether Hydrophobia can be transmitted from one man to another; though the experiments made by the distinguished French physiologists, Magendie and Breschet, at the Hôtel-Dieu of Paris, in 1813, proved that dogs could be rendered rabid, by inoculating them with the saliva of a person labouring under the disease. Hydrophobia is always communicated through the medium of the saliva; but it does not appear that this is capable of producing the disease without a wound having been inflicted, or the skin abraded. Some cases, however, are on record, which would lead us to believe that the poison may find its way into the system through the mucous membrane of the lips, without abrasion of surface. The great majority of people bitten by mad dogs are not attacked by Hydrophobia; indeed, Dr. Hamilton is of opinion that at an average not more than one person out of twenty-five of those bitten, becomes affected with the disease; and this may be in a great measure accounted for by the saliva being wiped from the teeth in passing through the clothes; hence the disease occurs most frequently from wounds inflicted on the face and hands.

The length of time which may elapse from the date of the bite of a rabid animal, to the commencement of Hydrophobia, is very uncertain; but, in general, it declares itself after thirty or forty days; though the poison has been known to remain in the system, in a latent state, during eighteen months, and even longer. The bitten part heals in the course of a few days, like any other simple wound; but when the disease commences, the

cicatrix or scar becomes painful, red or livid, and swollen; in some cases it re-opens and discharges a thin reddish-coloured fluid. This, however, is not always the case; symptoms of Hydrophobia may commence without the part presenting the slightest change in appearance, or being in the least degree painful. The disease is ushered in by slight shivering, head-ache, general uneasiness, and loss of appetite; by the sleep being disturbed by frightful dreams, and by extreme restlessness, agitation, and other symptoms of an excited or altered state of the nervous system; at length the patient accidentally discovers that the sight of water, or any shining substance, distresses him; and on attempting to drink, he is suddenly seized with a general and involuntary shivering. The circumstance of the bite is now brought to his recollection, associated with the idea of Hydrophobia, which strikes him with horror: a distressing sensation of heat and constriction at the throat is soon experienced, attended with urgent thirst: he appears exceedingly anxious and alarmed; the throat is frequently seized with violent spasms, threatening immediate suffocation, and the whole body is agitated. The spasms, after some time, extend to other parts of the body, and the fits become more violent, and occur more frequently. The saliva increases in quantity, becomes viscid, and is sometimes suddenly thrown out from the mouth. Thick mucus also collects in the throat and air passages, and in attempting to bring it up, harsh sounds are uttered, which have been supposed to resemble the peculiar growling of a dog in a similar state. The breathing is oppressed from slight causes, such as the motion of the air caused by opening a door; the slightest noise, and the sight or even the sound of water, greatly increase the suffering. The miserable patient, however, cannot refrain from attempting to quench the urgent thirst which continually torments him; he musters resolution, and with a determined effort, raises the water suddenly to his mouth; but, before he can drink, is seized with a violent spasmodic fit, and the vessel is dashed from his lips; thus, like another Tantalus, with the water within his reach, he is doomed to suffer from the most intolerable thirst.

Feverish symptoms are always present, from the time that the disease is fairly constituted; and frequent bilious vomiting, with much difficulty of breathing, adds greatly to the patient's distress;

the feeling of debility also, which has been complained of from the commencement, is much increased towards the termination of the disease. Delirium seldom occurs, but there is great irritability, both of body and mind; while anxiety, distress, and occasionally fury, are strongly depicted in the countenance. Sometimes, when in a fit of passion, the patient will even attempt to bite or spit at those near him, but he appears to be perfectly conscious of what he has done, and as soon as the paroxysm is over, is ready to apologize for his conduct. In some cases, though the pulse is very quick, yet the skin remains cool; and though blood has frequently been drawn from the arm, it has not in any case presented the buff-coloured crust indicative of inflammation.

The unfortunate sufferer is at last either carried off by a convulsive fit, or is worn out by repeated paroxysms, and sinks completely exhausted. The duration of the disease varies from thirty hours to five or six days: the average period is two days.

TREATMENT. The real nature of Hydrophobia is totally unknown, and we are equally ignorant of any method of treatment from which the least chance of success might be expected. Blood-letting, mercury, tartar-emetic, opium, arsenic, ammonia, tobacco, and a variety of other means, have been tried in vain; in fact, there is not a well-authenticated case on record of any one having recovered from this disease. Encouraged, however, by the great discovery of Jenner, which has placed in the possession of every one a simple and certain means of protection from one of the most disgusting and dangerous diseases incident to man, we have reason to hope that something, either accidentally, or from experiments made to ascertain the nature of the poison, may ultimately be found out, capable of preventing or counteracting the dreadful malady of which we have just given a brief description.

Opium, in large doses, is the only remedy that has been found to produce any very decided effect in alleviating the terrible suffering which the miserable patient is destined to undergo.

Various plans have been adopted to prevent the saliva of a rabid animal from acting on the system, but the one on which the greatest reliance ought to be placed, is to cut out the bitten part as soon as possible after the injury has been inflicted: this, though a harsh means, is the most effectual hitherto tried; but, in order to insure success, the operation must be effectually

performed, by the removal of every part which the dog's teeth may have touched. If any delay be likely to occur before the part can be removed, the individual should suck the saliva from the wound, if it has been inflicted on a part which renders this step practicable; and then immediately spit out the fluid he has withdrawn, and carefully wash his mouth. This simple method of preventing the absorption of the morbid saliva naturally occurs to every one; a mother never hesitates to put it in practice when her child is the sufferer, and many lives have been saved in consequence. We do not believe that any risk is incurred from adopting this measure, provided the mouth be repeatedly and carefully washed; and the best thing for this purpose is *a saturated solution of alum*, or salt and water may be used if alum be not at hand. The wound should also be well washed with the solution of alum, which may have the effect of preventing the poisonous saliva from contaminating the system, since we know that it possesses the property of destroying all morbid animal secretions.

Another simple mode of removing the poisonous saliva, is by cupping, by means of a common wine-glass; this is a very easy process: in order to exhaust the air, a piece of paper, moistened with spirit, and then lighted, is to be put into the glass, which is to be immediately applied over the part. These means, however, are not intended to exclude the use of the knife, or burning the part with caustic, and therefore surgical assistance should be procured as soon as possible. Whatever plan may have been resorted to with the intention of removing the saliva, the patient should be careful to keep the part discharging matter during six weeks or a month at least, by the application of an ointment composed of *basilicon* and *Spanish-flies*, or *savine ointment* may be used for this purpose.

In 1821, two Russian physicians, Salvatori and Marochetti, proposed a plan of treatment for preventing the development of Hydrophobia, which attracted considerable attention throughout Europe. Their observations led them to believe that when a person has been bitten by a mad dog, or any other rabid animal, there appear, generally between the third and ninth day, sometimes at a later period from the date of the accident, several small irregularly shaped pustules under the tongue, at each side

of the frænum, containing a thin matter, of a yellow or greenish colour; and that these small tumours seldom continue longer than twenty-four hours. This statement has been confirmed by the observation of French, Italian, and German physicians, but is still doubted by the profession in this country.

Marochetti directs a pint of the infusion of broom tops, and two drachms of the powder of the same plant, to be taken daily; and in the event of the infusion producing vomiting, it is to be discontinued, and four drachms of the powder are to be taken and continued during six weeks; beyond that period he does not believe that the patient runs any risk. During the whole time the mouth is to be carefully examined twice a day; and if the pustules appear, they are to be immediately opened, and the matter squeezed out; the parts are then to be burned with caustic, or by means of a red-hot wire, and the mouth afterwards well rinsed with the infusion of broom. This mode of treatment has been repeatedly tried in the French hospitals, without producing the effect of even retarding the progress of the disease in the slightest degree. Though doubts, therefore, may still exist with regard to the correctness of the statement relative to the appearance of pustules or pimples under the tongue, as a certain consequence of inoculation with the saliva of a rabid animal, there can be none with respect to the complete failure of the treatment proposed by Marochetti.

In concluding this subject, it may not be considered unnecessary to give a short description of the appearance which a dog presents, when in a rabid state. He at first appears dull and sullen, avoids the light, prefers solitude, and has an aversion to food: he snarls at the sight of a stranger, and may endeavour to bite him: he recognises his master, and fawns as usual on those whom he knows, but is peevish, irritable, and apt to snap or bite suddenly, without any provocation. After two or three days, if not confined, he quits his master's house, and runs along panting, with the tongue hanging from his mouth: his ears and tail droop, he appears much dejected, and his eyes are red and watery. He stops occasionally and gnaws at stones, bits of wood, &c., and attempts to bite every person he meets, but does not go out of his way to attack any one: he does not bark, but makes a peculiar growling noise, almost amounting to howling. Foam

appears at his mouth, he is seized from time to time with sudden fits of fury, and bites every animal within his reach, particularly his own species. Two or three days after leaving home, he is observed to be palsied behind, and to carry his head near to the ground: he becomes at last completely exhausted, and dies. Marochetti states, that the pustules above alluded to, appear under the tongue in rabid dogs at the same period after the bite, as in man.

It is very generally understood, that dogs become mad most frequently in the heat of summer; but from evidence collected from various sources, it would appear that in reality the disease does not occur oftener during one season than another: and it is a well-known fact, that in tropical climates dogs very rarely become rabid, and indeed, in some hot countries, Hydrophobia is altogether unknown.

HYPCHONDRIA, VAPOURS, OR LOW SPIRITS.

A person affected with this singular disorder is said to be hipped. It presents itself under such a variety of forms, and the symptoms vary so much in different individuals, that many pages might be filled in attempting to describe it. The opinions of physicians also differ widely with regard to the source and true nature of Hypochondria: some suppose it to be an affection of the brain, a species of mania; while others maintain that it is a disorder of the nervous system, arising from a deranged state of the digestive organs.

The following brief description, by Cullen, will serve to give an idea of the leading symptoms of this affection. "In certain persons," he says, "there is a state of mind, distinguished by a concurrence of the following circumstances: a languor, listlessness, or want of resolution and activity with respect to all undertakings; a disposition to seriousness, sadness, and timidity: as to all future events, an apprehension of the worst or most unhappy state of them; and, therefore, often upon slight grounds, an apprehension of great evil. Such persons are particularly attentive to the state of their own health, to every the smallest change of feeling in their bodies; and from any unusual feeling, perhaps of the slightest kind, they apprehend great danger, and

even death itself. In respect to all these feelings and apprehensions, there is commonly the most obstinate belief and persuasion." He also states that this complaint is always connected with indigestion, and that the symptoms by which it is particularly characterized, and which distinguish it from indigestion, are languor, sadness, and dread, affecting persons of the melancholic temperament, without any reasonable cause.

Hypochondria is not a disorder of young people; old maids, and bachelors advanced in life, are generally the unfortunate subjects of it. Agricultural labourers, and those who are actively employed, are very seldom troubled with Hypochondria; but the idle, the dissipated, and those who are constitutionally nervous and timid, among the higher classes of society, are very subject to it. Sedentary habits, particularly when connected with intense study, or long-continued attention to abstruse subjects, tend strongly to bring on this disease; hence it has been a common disorder of literary men in all ages. Aristotle assures us that all the great men of his time were melancholic or hypochondriac. "*Non est magnum ingenium sine misturâ dementiae.*"

Burton, in the "Anatomy of Melancholy," gives, in his peculiarly quaint style, an excellent description of the state of mind of many hypochondriacal patients. "They are," he says, "soon tired with all things: they will now tarry, now begone; now in bed they will rise; now up; then go to bed; now pleased, and then again displeased; now they like, by and by dislike all; weary of all; *sequitur nunc vivendi, nunc moriendi cupido*, saith Aurelian: discontented, disquieted: upon every slight occasion, or no occasion, abject; often tempted to make away with themselves: they cannot die, they will not live: they complain, weep, lament, and think they lead a most miserable life—never was any man so bad. Every poor man they see is most fortunate in respect of them: every beggar that comes to the door is happier than they are. Jealousy and suspicion are common symptoms in the misanthropic variety. They are testy, pettish, peevish, distrustful, apt to mistake, and ready to snarl upon every occasion, and without any cause, with their dearest friends. If they speak in jest, the hypochondriac takes it in good earnest; if the smallest ceremony be accidentally omitted, he is wounded to the quick. Every tale, discourse, whisper, or gesture, he applies to himself;

or, if the conversation be openly addressed to him, he is ready to misconstrue every word; and cannot endure that any man should look stedfastly at him, laugh, point the finger, cough, or sneeze. Every question or movement works upon him, and is misinterpreted, and makes him alternately turn pale and red, and even sweat, with distrust, fear, or anger."

A hypochondriacal patient often says that he is tired of life, and wishes that death would come to relieve him from his suffering; and yet his conduct shows how very desirous he is of living, and how much he dreads death. He consults every medical man of his neighbourhood, and is perhaps in communication with several of them at the same time; but, not believing that they pay sufficient attention to the Protean forms which his disorder assumes, he never follows out the treatment prescribed by any of them. He reads every medical book which comes in his way, and leaves no description of fashionable quackery untried: he has recourse to *animal magnetism*, and as long as he is impressed with the idea that it will be the means of cure, he fancies that it does him good: but, getting tired of this, he consults the *Homœopathists*, and soon loses confidence in their minute doses: a variety of empiric remedies are resorted to; but, instead of finding a specific for his numerous ailments, his digestive organs become materially affected from the quantity of medicine he has taken. The healthy appearance which he has probably hitherto retained now begins to leave him, and the consequences might soon be of a serious nature, unless he see the necessity of following the advice of the celebrated Italian physician Baglivi. "Although, at first sight," he says, "Hypochondriasis may appear a destructive and incurable disease, yet the patients may generally be very easily cured, not by taking great quantities of medicine, but by the cheerful discourse of friends, the innocent pleasures of a country life, frequent exercise on horseback, and by following the mode of living pointed out by a wise physician."

HYSTERICS.

Hysteria has, in many respects, a close resemblance to epilepsy, and is supposed by some physicians to be a species of that disease. Several well-marked symptoms, however, distinguish these dis-

orders from each other. In Hysteria the face is not nearly so much distorted, nor does it ever acquire a livid colour, as in epilepsy; and in the former affection the patient generally hears what is said to her, and seldom becomes entirely insensible: froth does not appear at the mouth, there is no grinding of the teeth, nor is the tongue ever injured: the breathing is not stertorous or snoring, and the hands remain open.

A paroxysm or fit of Hysteria is generally announced by headache, restlessness, cramps, coldness of the feet, yawning, and sometimes by immoderate fits of laughing, or crying and laughter alternately. The patient experiences a peculiar sensation, as if a ball (*globus hystericus*) were moving about with a rumbling noise in the belly: this, after some time, rises to the stomach, and from thence to the throat, where it fixes itself, causing a most intolerable feeling of choking or strangulation. The breathing now becomes hurried, the heart palpitates; giddiness, sickness at stomach, and dimness of sight, follow: the patient then falls down, seized with convulsions; she screams, perhaps tears her hair, and beats her breast; her body is writhed to and fro, and the limbs assume a variety of postures. The convulsive movements are not constant; a succession of fits take place, with longer or shorter intervals between them: sometimes the urine is discharged involuntarily; and during the absence of the convulsions, the patient laughs wildly, cries, or screams; and sometimes a distressing hiccup comes on. The abdominal muscles may be irregularly contracted, or the belly may be drawn inwards towards the spine, or is tense, and distended with air; the veins of the neck are greatly distended, and the carotid arteries beat with unusual violence. In delicate females the face is pale and flushed alternately; in the more robust it is flushed, and appears fuller than usual. The patient having remained in this state during a longer or shorter period, often for twenty-four hours, and sometimes considerably longer, at length begins to recover gradually: the spasms abate, wind is freely discharged from the stomach; there is frequent sighing or sobbing; she complains of severe head-ache, with a feeling of soreness over the whole body and limbs, and lies in a languid and listless state for some time before she is able to rise. The recovery, in some cases, is sudden,

and accompanied with a loud fit of laughing or immoderate crying; and there is often a copious discharge of pale urine.

This disease imitates so many others, and assumes such a variety of symptoms, that a concise description fails in conveying an adequate idea of it; but we do not see any necessity for giving a minute account of all its various forms and relations, because, however formidable in appearance, it is never attended with danger.

A point, however, of considerable importance with regard to Hysteria, is the difficulty of distinguishing it from other diseases: indeed, it has such a near resemblance, in many respects, to hypochondria in males, that medical men are often embarrassed by the variety of symptoms which occur in hysterical females; and in many cases considerable experience and judgment are required in order to be able to discriminate between functional or even organic disorders, and the endless variety of forms which this affection presents. An hysterical female sometimes complains of great pain and tenderness of the belly, and even screams if it be touched; she may have head-ache at the same time, and remain in bed during several days; but the pulse continues tranquil, and the skin is not hotter than natural. Many girls, however, have been bled repeatedly while in this state, under the idea that some inflammatory action was going on.

Pain about the region of the heart, accompanied with palpitations and occasional fainting fits, constitute another form which Hysteria assumes, and may at first lead any one, ignorant of the use of the stethoscope, to suppose that organic disease of the heart existed.

An hysterical girl may be attacked by severe pain in one of the breasts, which may continue for a considerable length of time; and not only herself, but her friends, are distressed beyond measure, with the idea that cancer is the cause of the suffering. Cases of this description arise, almost invariably, from some irregularity in the menstrual discharge; as soon, therefore, as proper treatment has had the effect of restoring the healthy function of the womb, the pain in the breast is no longer felt.

It not unfrequently happens that an hysterical young lady, after complaining of a variety of trifling or imaginary disorders,

is at length affected with a pain in the spine, and if the part be pressed with the fingers, or if a piece of sponge, which has been dipped in hot water, be applied over it, the pain is greatly increased. Leeches are repeatedly applied, without affording the slightest relief; and afterwards moxa, setons, and caustic issues, are employed, while the unhappy patient is confined to the horizontal posture, perhaps for many months. This treatment, which would be highly proper if the pain were the consequence of congestion, or inflammatory action in the spinal cord, or if the disease existed in the vertebræ, is here the worst that could be adopted, inasmuch as it deprives the patient of exercise, change of air and scene; and the various sources of healthy recreation and amusement, not only necessary at the period of life in which these disorders generally occur, but which are the most efficacious means that could be resorted to for relieving these pains, which are purely nervous, and arise from a disordered state of the womb, an organ which anatomy has shown to have an intimate nervous connexion with the spinal marrow.

Many hysterical females complain of pains in the joints, which continue for months, or even years, and are the source of much suffering. The knee-joint is most frequently affected, but the hip-joint, wrists, and ankles, are also subject to these nervous affections. Sir Benjamin Brodie, who is perhaps the first authority of the day on diseases of the joints, goes so far as to say, that "at least four-fifths of the females among the higher classes of society, who are supposed to labour under diseases of the joints, labour under Hysteria and nothing else." Sir Benjamin's own observations have, no doubt, led him to draw this conclusion; but there is reason to believe, from the statements of other experienced surgeons, that he has much over-rated the number of hysterical cases, though they are no doubt common, and frequently mistaken for joint diseases.

Hysterical females complain also of a variety of nervous pains in various parts of the body; for example, there may be a pain at the right side, and "liver complaint" is suspected, or the left side is the seat of the pain, which is then perhaps mistaken for an affection of the spleen; sometimes there is a pain in the stomach, attended with obstinate indigestion; and in other cases the hysterical disposition declares itself by frequent fits of dry

convulsive coughing. Cases of Hysteria occasionally occur in which the belly becomes gradually increased in size, the menses cease, the breasts enlarge, there is a pain in the back, sickness at stomach in the morning; and, indeed, pregnancy is so well counterfeited, that time, or the examination of an accoucheur, is required, before the real nature of the case can be ascertained.

Hysterical females are also subject to long-continued fainting-fits, and several well-authenticated cases are on record, where the body became so cold, the breathing so low, and the image of death so strongly represented, that the patients were supposed to be dead. Dr. Conolly, who has written an able treatise on Hysteria, mentions the case of a Lady Russell, in the early part of the last century, whose funeral having been postponed for a longer period than usual, afforded time for her happy recovery, which took place while the bells were ringing for prayers; the supposed dead person exclaiming that it was time to go to church. Indeed, to enumerate all the anomalous symptoms of Hysteria, and the various diseases which it simulates, would be to recount nearly all the ills to which flesh is heir; but it may be easily inferred from what has been stated, that great tact is often necessary, in order to distinguish hysterical affections from those of a more serious character.

CAUSES. Females, from fifteen to thirty years of age, are most liable to Hysteria, and it is generally observed in those of a highly nervous temperament, with spare habit of body; or in plethoric and fat persons, with soft and relaxed muscles, who are subject to irregularities of the menstrual discharge.

The most common exciting causes, are disappointed love, jealousy, undue excitement, ungratified desires, and all powerful mental emotions, which act strongly on the nervous system, and tend to induce disorders of menstruation. Hysteria, in fact, depends almost entirely on the education, social position in life, mode of living, and moral training of females; many, from having been over-indulged when children, become irritable, wayward, capricious, and, in a word, are so self-willed, that the slightest disappointment or opposition brings on a paroxysm. Sydenham remarked long ago, that, "Upon the least occasion they indulge terror, anger, jealousy, distrust, and other hateful passions; and abhor joy, and hope, and cheerfulness, which, if they accidentally

arise, as they seldom do, quickly fly away, and yet disturb the mind as much as the depressing passions do; so that they observe no mean in any thing, and are constant only to inconstancy. They love the same persons extravagantly at one time, and soon after hate them without a cause; this instant they propose doing one thing, and the next change their mind, and enter upon something contrary to it, but without finding it: so unsettled is their mind, that they are never at rest." People, in general, are not much inclined to sympathise with hysterical females, however formidable or alarming the fits may appear, because it is well known that this affection is in a great measure under their own control, and, in fact, in nine cases out of ten, the paroxysm is the result of a fit of bad temper, or of some excitement which could not have arisen in a well-regulated mind.

Strong religious feeling, acting on delicate or weak-minded females, is another fruitful source of Hysteria; and, in such cases, it is readily communicated from imitation and sympathy. This was exemplified, not long since, at Kilsyth and other parts of Scotland, by the unseemly extravagancies which were committed under the sacred name of religion; and which were attributed by many to the revival or miraculous influence of the Spirit, though there can be no great difficulty in seeing that they were perfectly in accordance with the laws of nature, and the result of powerful religious excitement acting on the minds of individuals not possessed of a sufficient degree of common sense to guide them. The influence of imitation in producing Hysteria has been shown, in several instances, by the inmates of nunneries and boarding-schools having been attacked with fits, one after another, until they were nearly all in the same state. In these cases, the means of cure, though considered rather harsh by the patients, is very simple, and consists in emptying a pail of water over them, with considerable force: this remedy has been found very efficacious in all the cases in which it has been tried, and has also acted as a never-failing preventive.

TREATMENT. Two indications are to be attended to in the treatment of Hysteria; the first is to shorten or moderate the violence of the paroxysm, the other to prevent the return of the fits.

When the fit is slight, the application of cold water to the head

and neck, putting salt in the mouth, and *sal volatile*, or *aromatic vinegar*, to the nostrils, are the means commonly put in practice, and sometimes with advantage; but, at all events, in mild cases, the fit may be allowed with perfect safety to run its course. When the paroxysm is severe, the first thing to be done is to prevent the patient from receiving injury by the violence of her struggles. She should be placed in bed in a well-aired apartment, her shoulders ought to be raised, and her dress loosened. If she be capable of swallowing, a teacupful of cold water, or the following draught may be given.

No. 233.

Camphor mixture, two ounces,
Sal volatile, (aromatic spirit of ammonia,) a teaspoonful. Mix.

Or a teaspoonful of *aether* may be given, in a little cold water. Should the face be flushed and the head hot, cloths moistened with *aether* are to be placed on the forehead, or wet towels or pieces of linen may be applied to the same part.

If the convulsions be severe, and the patient unable to swallow, clysters may be found very serviceable.

No. 234.

Barley water, eight ounces,
Rectified oil of turpentine, an ounce,
Olive oil, an ounce. Mix, as an enema.

An enema of cold spring water has been found very useful in allaying the violent muscular agitations. The assafoetida injection (page 37) has been recommended; but, though one of the best things that can be used in flatulent colic, it does not appear to possess any advantage here over the *enemata* above-mentioned, and is besides an exceedingly disgusting remedy.

Dr. Conolly mentions, that he has frequently known the fit prevented by the prompt administration of half a drachm of the *powder of ipecacuan*. Blood-letting is seldom necessary, and only where there is great determination of blood to the head; and in these cases the feet are to be put in warm water, containing powdered mustard, or mustard cataplasms may be employed.

But it often happens that all the remedial means resorted to, fail in either mitigating or shortening the fits.

Treatment during the intervals. In order to effect a radical cure of this affection, attention must be paid to the general health of the patient, and to the state of the digestive organs and womb. If the habit of body be full and plethoric, low diet and exercise are indicated; but if the patient be delicate and her stomach debilitated, tonic remedies, such as small and repeated doses of *quinine*, *preparations of iron*, and the *infusion of quassia* and *calumba*, are the most suitable remedies.

Should the disease be connected, which it very frequently is, with disorders of menstruation, we must refer the reader to a subsequent part of the work.

Valerian, castor, assafoetida, galbanum, and other remedies termed antispasmodic, are in very general use in the treatment of Hysteria, but we cannot say that we have ever known any permanent benefit derived from them; and we believe that medicine, to have any decided effect in this disorder, must be directed towards improving the state of the digestive and uterine functions.

It is not, however, to be supposed that much benefit can be derived from any description of medical treatment, as long as the moral and physical causes of the affection are kept up. If, instead of a pampered mode of living and stimulating diet; going to bed late at night, and rising at a late hour in the morning, the too frequent attendance at balls, parties, and public places of amusement; and the various debilitating causes which induce that susceptible state of the nervous system, which is so closely allied to this affection—the fair sufferers could command resolution to retire to rest at an early hour, in order to insure early rising in the morning, and take regular exercise on foot or on horseback, in pure air,—the general health and the function of the digestive organs would soon be so much improved as to render highly-seasoned dishes, wine, strong tea, coffee, and other stimulants unnecessary; and if at the same time they would endeavour to acquire a degree of self-control, sufficient to enable them to prevent their tempers being ruffled by the various sources of irritation to which every one must be subject, we are convinced that less would be heard of Hysterics and assafoetida.

An able and experienced German author, speaking of the effects of ease and luxurious habits in aggravating this disease, says, that the wives of merchants are subject to Hysteria in prosperous times, but when reverse of fortune comes they *have no time to be ill.*

The mind should, as much as possible, be kept easy, cheerful, and occupied with agreeable pursuits; the body should be sponged daily with tepid, or cold salt and water; or the shower-bath, or sea-bathing may be had recourse to. The state of the digestive organs should be carefully noticed, and it is of equal importance to maintain a healthy state of the uterine functions; the necessity of attending to the latter was inculcated by Hippocrates more than two thousand years ago: he remarks, that the best cure for Hysteria, is to marry and bear children.

ILIAC PASSION.

Iliac-passion, or Ileus, consists of excessive vomiting, with obstinate constipation of the bowels. This dangerous disease may commence suddenly and terminate fatally in the course of four or five days; but cases of this description are fortunately very rare. It usually commences with acute gripping pain, obstinate constipation of the bowels, retraction of the navel, and the usual symptoms of severe colic, which not being relieved by any mode of treatment, a still more distressing state supervenes. The patient is racked with violent pain, the belly becomes swollen, and tender to the touch; the pulse is weak, small, and quick; the thirst is urgent; the face appears anxious and shrunk; faecal matter is vomited; cold sweats, hiccup, and frequent fainting fits follow; and death generally puts an end to the patient's misery. In some cases acute pain is felt at a particular part of the abdomen, accompanied with heat of skin, quick pulse, thirst, and the ordinary symptoms of inflammation; in others there are no symptoms of fever; in the latter case life may be prolonged a considerable length of time. Dr. Baillie mentions the case of a man who had no evacuation from his bowels for nearly fifteen weeks before he died; and a case came under our notice, not long since, of an aged female who vomited faecal

matter every other day, and had no discharge from her bowels for eighty-one days before her death. She sunk completely exhausted, without having suffered acute pain at any time during her illness: the fluids which were thrown into the bowels by clyster were discharged by the mouth, which showed that the peristaltic motion was inverted through the whole length of the alimentary canal. A similar instance is mentioned by Cullen, of a patient in the Edinburgh infirmary, " who for weeks threw up stercoreaceous substances, and the matters injected by clysters; but there was an entire absence of fever, and the disease, by its circumstances and cure, showed that no inflammation was present."

CAUSES. Ileus may arise from various causes, the principal of which are ruptures; one portion of the bowels passing within another, and becoming entangled; contraction or stricture of the bowel; obstruction from cancerous or other morbid growths; bands formed by false membranes, strangulating or compressing a portion of gut; paralysis, or torpor of the bowels, arising from hardened fæces, impacted in some part of the intestinal canal; or it may be a symptom of inflammation of the bowels.

TREATMENT. We have already mentioned that Iliac-passion generally commences with common colic, (see page 161,) hence before the symptoms which constitute this affection supervene, the usual means have been tried to relieve the patient. It may, therefore, readily be supposed, where active remedies have failed to produce any good effect, at an early period, when most likely to have been serviceable, that the chance of success from any method of treatment must afterwards be greatly diminished.

In every case, the first thing to be done is to ascertain whether or not the disease is the result of hernia or rupture. A hernial tumour is sometimes so small, that the patient is ignorant of its existence, or may not consider it worthy of notice; and females are often ashamed, or unwilling to admit that they have any complaint of this nature. We ought not, therefore, to rest satisfied with the statement of the patient, but should examine the parts subject to rupture with the greatest care. In order to illustrate the necessity of attending to this, we may mention a case which came under our notice a few weeks ago. A young woman having been affected for some days with constipation of

the bowels, a disorder by no means uncommon in females who lead a sedentary life, was attacked by repeated vomiting: at first the contents of the stomach, mixed with bile, were discharged, and afterwards large quantities of excrementitious matter were thrown up. On examining the groin, a small hernial tumour was observed, which she said had existed several years; and, though it gave her no pain, was, nevertheless, the cause of all her suffering. The usual operation for the purpose of relieving the strangulated gut which the swelling contained was performed by an able surgeon, Mr. Jordan, of Manchester; and the patient, who otherwise would have died, in all probability, in the course of twenty-four or thirty hours, was soon restored to health. Non-professional people would be more likely to attribute the violent train of symptoms attending Iliac-passion, to other causes than a small tumour in the groin, and would consequently be led to administer powerful purgatives, and other strong remedies, which, in such cases, instead of doing good, would certainly aggravate the patient's suffering, and, if persisted in, would soon bring on inflammation, mortification, and death. Hence the necessity of procuring the best professional assistance at an early stage of the disease.

Another essential point to be attended to, before having recourse to any remedial means, is to ascertain whether or not the disease is accompanied by inflammation, the signs of which are, a constant, acute, and burning pain in the belly, which is distended, tense, hot, and acutely sensible to the slightest pressure; urgent thirst, and high-coloured urine. In this case, instead of giving opiates, and strong purgatives, which would soon destroy the patient, recourse must be had to general and local blood-letting, and the means usually adopted to subdue inflammation of the bowels, (see page 68,) of which the Ileus may be only a symptom; and will then, of course, be removed along with the inflammation.

If the disease do not depend on hernia, and if no inflammatory symptoms be present, it then becomes advisable to administer purgatives, and opiates. Dr. Hufeland recommends a table-spoonful of recently expressed *linseed-oil* to be taken every hour; and he also states that he has known several patients relieved by the following mixture:—

No. 235.

Almond oil, and
Epsom salts, of each one ounce,
Purified extract of aloes, ten grains,
Extract of henbane, a scruple,
Water, eight ounces. Mix. Two tablespoonfuls every two hours. The bottle to be shaken before the medicine is used.

If the above remedies do not act on the bowels, *castor-oil* or *croton-oil* should be taken, in the manner directed at page 163. A large dose of *calomel*, (from eight to fifteen grains,) with two grains of *opium*, or eight grains of the *extract of henbane*, will sometimes allay the irritability of the stomach, and open the bowels. The vomiting, however, is in some cases so incessant, that all remedies are rejected; here the principal reliance must be placed on warm emollient and stimulant enemas, (No. 100 and 101,) and the hot turpentine fomentation ought to be applied over the belly, as long as the patient can bear it. If the bowels be not moved by the above injections, they should be repeated, with the addition of four grains of *tartar emetic*.

If the disease resist all these remedies, the patient should be bled from the arm, even if no inflammatory symptoms exist; and afterwards a pill may be given, every three or four hours, containing four grains of *calomel* and one grain of *opium*, or half a grain of *muriate of morphia*; and in the event of the pills being rejected by the stomach, clysters of starch should be administered, each containing fifty or sixty drops of *laudanum*.

When the ordinary means fail, some practitioners recommend the administration of quicksilver, in doses of one or two pounds, or common shot in the same doses, with the intention of forcing a passage through the bowels.

It is impossible, however, to ascertain whether or not Iliac-passion depends on causes capable of being removed; hence, the treatment in every case must be very uncertain. This dangerous disease but too frequently arises from mechanical causes, not susceptible of relief from any description of remedies; in other cases it is the result of incurable organic disease, and then all that can be done is to administer opiates, in order to soothe the patient's sufferings, which are sometimes prolonged to a distressing extent.

INDIGESTION.

Before commencing the subject of Indigestion, we shall endeavour to give a brief description of the alimentary canal and its functions.

Fig. 1.



General view of the interior of the Chest and Belly. The midriff and mesentery are removed, and the liver is turned up.

- 1. Right lung.
- 2. Divisions of left lung.
- 3. Right ventricle of the heart.
- 4. Right auricle.
- 5. Edge of left ventricle.
- 6. Pulmonary artery.
- 7. Aorta.
- 8. Edge of midriff.
- 9. Right lobe of liver.
- 10. Left ditto.
- 11. Gall-bladder.
- 12. Cardiac end of stomach.
- 13. Pyloric ditto.
- 14. Mesentery.
- 15. Ileum.
- 16. Cœcum.
- 17. Vermiform process.
- 18. Colon.
- 19. Duct from liver.
- 20. Duct from gall-bladder.
- 21. Common Gall-duct.

Digestion is a function common to all animals, and in the fullest sense of the word, comprehends the whole of the complicated process, by which the food taken into the stomach is converted into two parts; the one nutritive and necessary for the maintenance of life, which, after being conveyed by certain vessels into the general circulation, is carried along with the blood to all the textures of the animal machine, of which it becomes a constituent part, and is endowed with the properties of life; the other excrementitious, which, after passing through the whole extent of the alimentary canal, is thrown out from the body.

The first change which the food undergoes, takes place in the mouth, where it is divided by the teeth called the incisors or cutting teeth; torn into minute portions by the canine or dog teeth: and finally bruised by the molares or grinders. While mastication is thus being performed, the portion of aliment is moistened and reduced to a pulpy mass, by means of the saliva and mucus which are poured into the mouth in great abundance by numerous glands, each of which has a duct to convey the fluid which it secretes. There are three salivary glands on each side; the sublingual, situated under the tongue; the submaxillary, situated under the lower jaw; and the parotid glands, situated at the angles of the jaws and in front of the ears: the latter are the largest, and the fluid which they contribute is conveyed by two ducts, called the parotid ducts, which open into the cavity of the mouth on each side, opposite the second molar tooth of the upper jaw. The quantity of fluids thrown into the mouth, during the mastication of an ordinary meal, is supposed to be not less than half a pint.

Mastication and insalivation, besides giving to solid food a consistence which renders it easily swallowed, also constitute a necessary preparation for the due performance of the digestive process in the stomach. Hence we observe, that individuals who have lost their teeth, and those who eat too quickly, without sufficiently masticating their food, are more frequently troubled with Indigestion than others.

From the back part of the roof of the mouth is suspended a moveable partition, or curtain, called the soft palate, between the divisions of which is situated the uvula or pap of the throat. This structure is muscular, and in the act of swallowing rises up

and effectually closes the passages which lead to the nostrils and ears, and thus prevents the food from entering them.

Having passed the soft palate, the food enters a muscular bag, called the pharynx, in front of which is an opening leading to the windpipe; and at its lower extremity is another opening, leading to the stomach. The pharynx contracts the instant the food comes in contact with it, while the gullet and windpipe are raised upwards and forwards: (this movement may be felt, if the hand be placed on the protuberance in front of the throat, known by the name of Adam's apple;) and at the same time, a cartilaginous lid, which runs backwards from the root of the tongue, is drawn down upon the entrance of the windpipe, and serves as an effectual barrier to the admission of the food into this passage, which is intended exclusively for the conveyance of air into the lungs. Sometimes, however, it happens, in consequence of laughing or speaking while swallowing, that a small portion of food or fluid finds its way into the windpipe, and causes a severe fit of coughing, which continues until the substance is expelled.

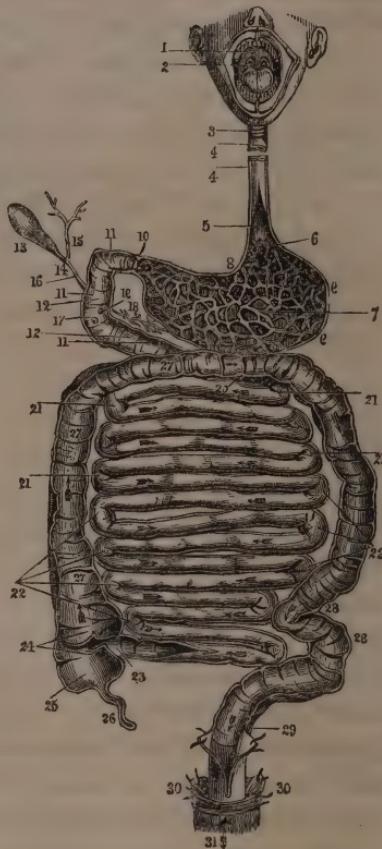
The contraction of the pharynx forces the food into the gullet, a muscular tube, which runs down behind the windpipe into the chest, pierces the midriff or diaphragm, and terminates at the cardiac or upper extremity of the stomach. The food does not pass along the gullet from its own weight, but is propelled by the contraction of the muscular fibres of the tube. We know this, because a person may swallow when standing on his head, and in many of the lower animals, the food is transmitted upwards into the stomach, against its own gravity.

The stomach is a membranous bag, resembling the pouch of a bagpipe, and is situated at the upper and left side of the abdomen, immediately under the midriff; having the liver above and to the right, and the spleen to the left. At its left extremity is the upper or cardiac opening, through which the food enters from the gullet; and at its right extremity is the pyloric or lower orifice, which communicates with the first division of the intestines. The stomach, like the gullet and intestines, is composed of three coats or layers; the external or peritoneal coat is derived from the peritoneum, or lubricating membrane, which lines the cavity of the abdomen; the middle or muscular coat is composed of longitudinal and circular fibres, which, from the power

they possess of expanding and contracting, allow the organ to accommodate itself to the bulk of its contents; while their alter-

Fig. 2.

1. The soft palate.
2. The uvula or pap.
3. Portion of the wind-pipe.
4. The gullet.
5. Its inner surface.
6. Cardiac, or upper end of stomach.
7. Inner coat of stomach.
8. Small or upper curve of ditto.
9. Great or under curve of ditto.
10. Pyloric or lower end of ditto.
- 11 11 11. The duodenum.
- 12 12. Valvula conniventes.
13. Gall-bladder.
14. Duct leading from ditto.
15. Duct from liver.
16. The common duct for the bile.
17. Point where the common duct opens into the intestine.
18. The duct of the pancreas (the gland itself is removed).
19. Opening of this duct.
20. Duodenum joining the jejunum.
- 22 22 22. The ileum.
23. Point where ileum joins colon.
- 24 24. The valve which separates the small intestines from the great.
25. Cœcum.
26. Vermiform appendix.
- 27 27 27. The colon.
- 28 28. S-like bend of colon.
29. The rectum.
- 30 30. Muscles of anus.
31. Anus or fundament.

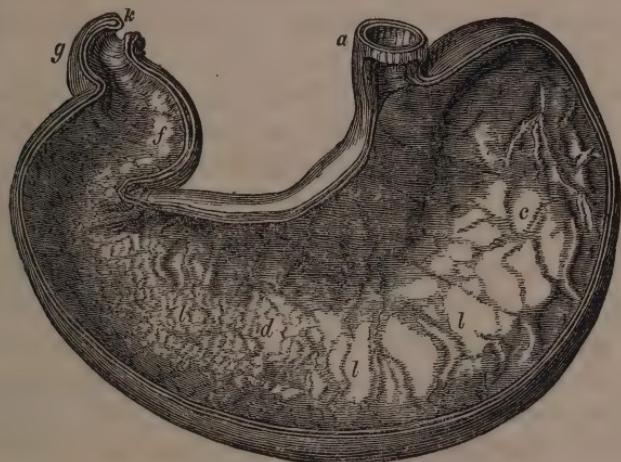


nate contraction and relaxation give the food a degree of motion which permits every part of it to be sufficiently acted on by the gastric juice; the inner coat, or lining membrane, is of a pale pink colour, has a velvety appearance, and is always covered with thin viscid mucus: numerous minute glands are situated under this coat, and seem to form part of it; they secrete mucus for the purpose of lubricating the stomach, and protecting it from the action of irritating bodies.

The stomach is more abundantly supplied with blood-vessels than any other organ, except the brain, and is furnished with nerves of two classes, the sentient or animal, and the organic or involun-

tary. By means of the latter, which are very numerous, and follow the arteries to their most minute terminations, the stomach is enabled to perform its organic functions independently of the will, and without our being conscious of the change which the aliment undergoes.

Fig. 3.



a End of gullet.

c Large end of stomach.

d Cavity of the stomach.

fg Lower or pyloric end of stomach.

k Muscular band round pyloric end.

ll Folds of mucous membrane of stomach.

The most important phenomena connected with digestion take place in the stomach: here the food is steadily maintained at the temperature of about 100° of Fahrenheit, and is submitted to a constant gentle movement, effected by the muscular contractions of the organ, which causes it to be thoroughly mixed with the gastric juice. This fluid is secreted by the minute terminating or capillary branches of the arteries, and is endowed with the singular property of reducing every kind of food exposed to its action to a soft fluid mass, called *chyme*, which passes through the pyloric orifice, situated at the part commonly called the pit of the stomach, into the first division of the small intestines, where it undergoes further changes.

Various theories have been formed to explain the action of the digestive organs on the food; but there is still a great difference of opinion on this subject, among the most distinguished physiologists. The process of digestion has been supposed to depend on fermentation, or some kind of chemical action. Some have

endeavoured to explain it on mechanical principles; others refer it to the direct agency of the nervous system; and it has been attributed to a peculiar vital function. In fact, all our knowledge on the question does not appear to extend much beyond the following observation, made by Dr. William Hunter. In speaking of the action of the stomach on the aliment, he says, "it does not act as a mill, a fermenting vat, or a stewpan, but as a stomach."

The small intestines are divided into three portions, the duodenum, jejunum, and ileum; and vary in length from twenty-five to thirty feet. Two important fluids, the bile and pancreatic juice, the former furnished by the liver, the latter by the pancreas, are poured into the duodenum, about six inches from its commencement, by two ducts, having an orifice common to both. These secretions, along with a peculiar fluid, furnished by the mucous coat or lining membrane of the duodenum, are mixed with the chyme, which is now submitted to a second digestive process, changes its appearance, and acquires new properties. It loses the sweetish and slightly acid taste, which it had on entering this portion of the alimentary canal, and becomes bitter and alkaline, while its greyish colour changes to yellow. This is soon followed by another change; the chyme separates into two parts, one of which, termed *chyle*, is a thick, white fluid, like cream, and is the nutritive part of the food; the other is a yellow coloured pulpy matter, unfit for the nourishment of the body.

The mucous, or lining membrane of the small intestines, is covered with innumerable hair-like points, so closely placed together, that they form a surface resembling velvet; these are the absorbent vessels, called *lacteals*, from the milky fluid which they convey. Each of these small tubes is surrounded by an artery, a vein, and a nerve, united by delicate cellular membranes, forming a kind of net-work, but so minute as to be invisible to the naked eye.

The process of absorption, by which the chyle is carried into the system, has been compared to that by which the roots of plants take up the watery nutritive matter from the soil; the countless multitude of points that form the velvet-like surface of the mucous membrane, being represented by the hair-like tufts attached to the fibres of the root. The absorption of the *chyle* is

greatly facilitated by numerous prominent folds of the mucous membrane, called *valvulae conniventes*. These folds are found throughout the whole of the smaller intestines, but are most numerous in the jejunum. They are evidently intended to increase the extent of surface for absorption, and also to retard the progress of the chyle, so as to allow it sufficient time to be absorbed by the lacteals. These vessels pierce the coats of the intestines, and pass to the glands of the mesentery, a broad membrane, composed of two layers of peritoneum, which supports the intestines and keeps them in their places. The chyle having undergone, according to the general supposition, some important change in these glands, passes through the same description of vessels to a small oval sac, called the receptacle of the chyle, which rests on the first or second vertebra of the back. This sac also receives the *lymph*, a clear organic fluid, brought from all parts of the body by the lymphatic system of vessels. From this receptacle the chyle, mixed with the lymph, enters the *thoracic duct*, which runs upwards, resting on the spinal column, to the neck, and pours these fluids into the left subclavian vein, a little before it joins the superior cava vein, to enter the right side of the heart. At the termination of the thoracic duct in this large vein, are placed two valves, which prevent the chyle from returning, and the blood from entering the duct. The lacteals are also furnished with a great number of semilunar valves, in order to prevent the chyle from regurgitating towards the origins of these vessels.

From the right side of the heart, the chyle and lymph, mingled with the venous blood, are sent to the lungs, where they are converted into arterial blood, which is returned to the heart; the left ventricle of this organ then contracts, and propels it into the arteries, through which it is distributed to all parts of the body. (See *Heart, Structure of*.)

We have still to notice the important function performed by the remaining portion of the intestinal canal, the office of which is to convey from the body that part of the food which cannot be converted into nutriment.

The peristaltic or vermicular motion gradually propels the chyle and excrementitious matter along the small intestines, until at length the whole of the former is absorbed by the lacteals, and

the latter then passes into the large intestines, which are divided into three portions, the cœcum, colon, and rectum. The diameter of the large intestines is much greater than that of the others, but the length is not so extensive, being not more than six feet.

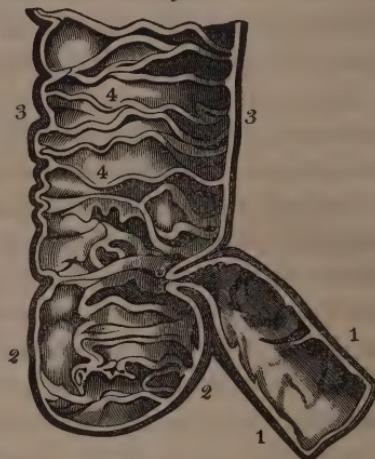
The *cœcum*, in which the ileum or last division of the small intestines terminates, is about three inches in breadth, and has a valve, which effectually prevents its contents from returning into the small intestines.

The *colon* is about five feet in length; it runs up from the cavity of the haunch bone on the right side, passes under the concave side of the liver, across the belly, in front of the small intestines, and under the stomach to the left side, forming an arch, called the transverse arch, then passes down on the left side, and runs under the left kidney, making a curve resembling the letter S, termed the sigmoid flexure, which is partially covered by the small intestines, and terminates in the *rectum* or straight gut, which is about eight inches in length, having the anus or fundament at its termination.

After the excrementitious part of the food has passed into the cœcum, it acquires the peculiar smell of fæces; and as it passes along the colon, is gradually deprived of its fluid parts, and at last reaches the rectum, where it accumulates until the bowel becomes so much distended as to induce a sensation which leads to the expulsion of its contents from the body.

All the remarks hitherto made are applicable chiefly to the slow process of digestion which the solid food undergoes; that of fluids takes place rapidly. A draught of water taken into the stomach is absorbed in the course of a few minutes, without entering the intestine, and is soon thrown out from the system

Fig. 4.



1 1. The ileum.

2 2. Cœcum.

3 3. Colon.

4 4. Valvulae conniventes.

5 5. The valve which separates the ileum and cœcum.

in the form of urine and perspiration. When liquid food is taken, the fluid part is quickly absorbed, in order to allow the gastric juice to act on the nutritious portion. But in weak stomachs, the absorption of liquids does not go on so speedily; hence, beef-tea, soup, and other kinds of liquid food, are more difficult of digestion, and remain longer on the stomachs of those affected with Indigestion than tender solid food.

This rapid sketch of one of the most important functions of the animal economy, may serve to assist the reader in understanding the nature of Indigestion, which we shall now proceed to describe without dividing the subject into many forms or varieties, which would only tend to bewilder those who have not received a medical education.

There are few individuals who have not experienced oftener than once in the course of their lives, the affection known under the name of Indigestion (*dyspepsia*), and indeed when we consider the delicacy and complexity of the apparatus by which digestion is effected; the important duty which the stomach has to perform; its numerous sympathies and connexions with other organs; the almost incessant exercise of its functions; and the frequent irritation to which it is exposed from errors in diet, and the stimulating action of wine, spirits, and other exciting liquors;—we need not be surprised that this affection is so common; but, on the contrary, have reason to be astonished that the digestive organs are capable of resisting, to the extent that they generally do, the various debilitating and exciting causes to which they are so frequently subjected.

Accidental attacks of Indigestion are of very frequent occurrence, and arise for the most part from overloading the stomach with food, and indulging too freely in wine, spirits, or other intoxicating liquors. The principal symptoms are, a sense of fulness, weight, and uneasiness at stomach; foul tongue, a bitter taste in the mouth, nausea, loss of appetite, with a particular aversion to fat or oily substances, and sweet or insipid articles of diet; flatulency, sick headache, (see page 325) and sometimes heartburn. In such cases a gentle emetic of *ipecacuanha*, a draught of warm *chamomile tea*, or irritating the throat with a feather, in order to rid the stomach of the aliment with which it

is overcharged; followed by a mild dose of *tincture of rhubarb*, *Gregory's stomachic powder*, or some other gentle laxative; and spare diet for a few days, so as to allow the weakened stomach to recover its tone,—are the simple means to be resorted to for the purpose of restoring the healthy functions of the digestive organs. Other causes, however, besides repletion, may give rise to an accidental fit of Indigestion: of these we may enumerate articles of food difficult of digestion; certain circumstances occurring shortly after a meal, as exposure to extreme heat or cold, the use of ices, and strong mental excitement; eating quickly after long fasting; constipation of the bowels; accumulation of bile or mucus in the stomach, &c. In all cases of this description, when the disorder can be easily traced to some accidental cause, the above treatment, if no inflammatory or feverish symptoms be present, will soon restore the stomach and bowels to a healthy state.

Confirmed or chronic Indigestion may depend on debility, or want of tone of the stomach, or it may be caused by the lining or mucous membrane of this organ being in a state of irritation or chronic inflammation.

The chronic form of Indigestion depending on debility, or functional derangement of the stomach, commences slowly, and often advances to a considerable extent without particularly attracting the patient's attention. The symptoms that indicate the approach of this insidious disorder are numerous, but we shall only notice those which most frequently present themselves—the sleep is disturbed, and the patient is restless during the night, but in the morning he sleeps heavily, beyond his usual hour of rising, and awakes unrefreshed, with a bitter taste in his mouth. He has very little appetite for breakfast, and can only relish savoury articles of food; during the day he feels languid, and sometimes drowsy, particularly after meals; and has little inclination for exercise or mental exertion. After some time a sensation of dryness in the throat begins to be felt in the morning, attended with expectoration of grey-coloured phlegm, and sometimes with slight sore throat. As the disease advances the appetite becomes more impaired, nausea and inclination to vomit are occasionally experienced; an unpleasant sensation of heat is sometimes felt at the stomach during the day; the disinclination

to exercise and mental occupation increases, and there is drowsiness after dinner. These symptoms are followed by a dull, heavy pain in the head; and a feeling of weight at the stomach, with flatulency and heartburn after eating. When this form of Indigestion becomes confirmed, the face is pale, the eyes appear dull and heavy; the mouth feels clammy; the tongue is flabby, pale, or whitish, and more or less furred; there is a constant sense of fulness and distension in the belly, and the bowels are irregular, the evacuations being scanty and particularly fetid, or copious and frequently containing bile, and portions of half digested food; the urine is clear, copious, and, after standing some time, deposits a reddish sediment, indicating acidity in the stomach and bowels; or it may become turbid, and deposit a whitish substance, showing an alkaline state of the contents of the stomach; the temperature of the body is lower than natural, the feet are often cold, and the pulse is soft and weak. When the disorder is of long continuance, other organs of the body become sympathetically affected; in some cases there is a troublesome dry cough, or there may be palpitation of the heart, and intermitting pulse, which lead the patient, now low-spirited and timid, to suppose that his heart is diseased, and this idea preys upon his mind and tends to aggravate all the symptoms. The mental powers, particularly of application and memory, become impaired along with the general health and strength. The patient may remain in this state a considerable length of time, and then gradually recover, or the inflammatory form of Indigestion about to be described supervenes.

CAUSES.—The state of functional derangement on which this form of Indigestion depends, may be occasioned by impaired organic nervous power of the stomach, depraved or deficient secretion of the gastric juice, diminished absorbing power of the stomach, rendering the digestion of fluids slow and difficult; a diminution of its muscular power, causing the mixture of the food with the gastric juice to be retarded or rendered imperfect. One or more of these deranged states may exist, independent of, or associated with, disorders of the intestines, liver, or some other organ; indeed the stomach participates in the suffering of every other part of the body, and the majority of diseases are accompanied, even from their commencement, with symptoms of Indi-

gestion. Hence the necessity of ascertaining, before adopting remedial means, whether this affection is primary or symptomatic of disorders of other organs or parts.

We have now to notice the *exciting causes*, the most important of which are the following: Habitual inattention to diet, both as regards the quality and quantity of food; irregularity in the times of eating; drinking large quantities of tea, and other relaxing fluids; and the habitual use of malt liquor.

Want of exercise is another fruitful source of this disorder; hence it is frequently met with, not only in the indolent and luxurious, but also among industrious artisans, who are habitually employed in sedentary occupations. Literary men particularly suffer from this cause, conjoined with over exertion of the brain. Want of pure air, and the impeded admission of light into the dwellings of the poor, exercise a powerful influence in producing that depressed state of constitution which predisposes not only to Indigestion but to scrofulous affections, consumption, and typhus. Hence the inhabitants of the metropolis, and other large cities, who reside in narrow streets and lanes, and live in obscure, ill-ventilated houses and cellars, are very subject to these disorders, and the artisans of our large manufacturing towns, who breathe a vitiated atmosphere, impregnated with a thousand impurities, and who seldom have it in their power to inhale the pure air of heaven, or enjoy the free light of day, suffer greatly from disorders of the digestive organs: depression of spirits, and languor after bodily exertion, are the never failing consequences; a craving for intoxicating liquors follows, which few are able to resist, and this pernicious indulgence, though it causes them to forget their miseries for a time, is sure to aggravate their ailments, while at the same time it gradually breaks down their constitutions; so that when overtaken by typhus or any other acute disease, their vital energies soon become so prostrated as to render the most judicious remedial means but too frequently of no avail.

Frequent and long exposure to a cold moist atmosphere, anxiety, grief, disappointment, and all the depressing passions, tend strongly to bring on Indigestion: and it may be traced in many cases to immoderate discharges from the body, such as flooding, frequent blood-letting, the disorder called the whites,

(*leucorrhœa*,) excessive loss of blood from piles, and protracted suckling. This last seldom fails, in not only weakening the stomach, and producing a variety of unpleasant symptoms, but exhausts the strength, and predisposes the body to the invasion of more serious disorders.

Indigestion from functional derangement of the stomach is most frequently met with among people of relaxed constitutions, with languid circulation, soft flesh, pale skin, and who are subject to cold feet and hands.

TREATMENT.—Accidental attacks of Indigestion generally arise from repletion of the stomach, or from eating articles of food difficult of digestion ; and the treatment, as we have already mentioned, consists in gentle emetics, laxatives, and abstinence ; but when the disorder is confirmed, emetics are seldom required, and if taken, unnecessarily, tend to aggravate the symptoms. Some people, however, when they feel uneasy after a full meal, have recourse to emetics, or adopt the plan already noticed, of irritating the throat by a feather, or with the finger, in order to produce vomiting ; but this is a very injurious habit, and though it give temporary relief, yet, if persisted in, may ultimately induce some organic disorder of the stomach. Another pernicious custom is the habitual use of laxatives : ordinary doses of these medicines soon lose their effect, and even large doses of strong purgatives ultimately fail to act on the bowels ; and the patient, after seeing the inutility, and experiencing the bad effects of this practice, at last finds the necessity of seeking relief from the more natural means of exercise and a properly regulated diet. Mild laxatives are no doubt occasionally necessary, and in the article on Constipation are several formulæ suited to various habits and deranged states of the digestive organs. Dr. Todd recommends the following pills as the best adapted to this form of Indigestion :

No. 236.

Socotrine aloes,

Rhubarb, and

Gum guaiac, of each a scruple,

Ipecacuan four grains.—Mix and form into twelve pills—one or two to be taken occasionally when necessary.

Various bitter, astringent, and aromatic remedies, are used, to correct the weakened and relaxed state of the stomach, which

results from the debilitating causes above mentioned; but these tonic remedies, though useful in many cases, frequently fail in producing any good effect, even when the symptoms appear to indicate their use; and as they all possess heating and stimulating properties, invariably do harm in the form of Indigestion, depending on irritation or chronic inflammation of the stomach, characterised by furred tongue with red edges and point, thirst, tenderness or pain at the stomach after eating, or on pressing on it with the hand, and feverish symptoms.

The tonics commonly used are, the *infusions of chamomile flowers, calumba, gentian, and cascarilla*; the *elixir of vitriol (aromatic sulphuric acid)*, *diluted nitric acid*, and the *tincture of steel*. These remedies may be taken, as directed in other parts of the work, or the subjoined formulæ may be used:

No. 237.

Compound infusion of gentian, an ounce and a half,
Orange-flower water, three ounces,
Diluted nitric acid, forty drops,
Syrup, two drachms. Mix.—To be taken in the course of the day, and continued during a fortnight or three weeks; or

No. 238.

Infusion of calumba, seven ounces and a half,
Subcarbonate of soda, half a drachm,
Tincture of henbane, two drachms. Tincture of orange-peel, two drachms and a half. Mix.—One or two table-spoonfuls to be taken three times a day; or

No. 239.

Decoction of bark, four ounces,
Carbonate of ammonia, twelve grains,
Tincture of cascarilla, four drachms,
Syrup of orange-peel, three drachms. Mix.—To be taken in the course of the day.

But the remedies which we have found to be the most serviceable, are the *extract of henbane*, followed by quinine, as prescribed at page 47, and the *oxyde* (now called the *trisnitrate*) of *bismuth*, as directed at page 52.

When Indigestion is associated with torpor of the liver, the evacuations from the bowels being of a white or clay colour, while the eyes and complexion have a yellowish tinge, a blue pill should be given every second night, followed by a *Seidlitz powder*, or a small dose of *Epsom salts* in the morning, and continued until the

discharge resume a natural appearance. But unless there be reason to suppose that the liver is not doing its duty properly, recourse should not be had to mercurial preparations. The practice, which Abernethy made so popular, of giving blue pill, calomel, &c., in all affections connected with a deranged state of the digestive functions, is not only absurd, but injurious, inasmuch as it renders the patient weak, nervous, and constantly susceptible of cold; and induces, in many people, a state of morbid irritability, which allows the system to be acted upon by various exciting and depressing causes, that in the usual state of health would have no effect. If Indigestion be connected with impaired or obstructed menstruation, *preparations of iron*, and *pills of myrrh and aloes*, are to be used. (See Menstruation, disorders of.) If eruptions appear on the skin, the *compound decoction of sarsaparilla* will be found the most serviceable remedy. When it is complicated with piles, gravel, or affections of the kidneys, the treatment appropriate to these cases must of course be resorted to.

But medical means are not likely to be of much service in Indigestion, without the strictest attention to regimen and diet; and it ought to be strongly impressed upon the patient, that his health is in a great measure in his own hands, and that unless he has the resolution to avoid the causes on which the disease depends, the aid of the physician will be of but little avail. Many people, however, have it not in their power to adopt appropriate means for the removal of this tedious and obstinate disorder; and under these circumstances, it becomes necessary to alleviate the symptoms, by administering medicines to assist the digestive process. But the dyspeptic patient ought ever to bear in mind, that temperance and exercise are the chief means, not only of preventing, but of curing Indigestion, and are indispensable in every form of the disorder.

A proper regulation of the diet is probably the most essential point, and the patient ought not only to avoid excess in eating, but must carefully abstain from articles of diet which he has found to disagree with him. The meals should be regulated according to the occupation, habits of life, and peculiarities of constitution of the individual; for it is not to be supposed that the same kinds of food will be suitable in all cases. A few

general directions, however, may be given, which can be modified according to circumstances.

At breakfast the patient should not take more than one cup of tea, coffee, or chocolate, with a moderate quantity of bread a day old, and a little fresh butter; an egg may be allowed, if sufficient exercise be taken. Dinner should be taken about six hours afterwards, and ought to consist of from a quarter to half a pound of lean animal food, particularly mutton, poultry, venison, game, or very tender beef, roasted or broiled, with stale bread, and a small quantity of rice, mealy potatoes, or of any tender well-boiled vegetable that agrees with the patient. The use of wine at dinner must depend in a great measure on former habits. In general, a glass or two of old sherry, old port, hock, or Sauterne, or a little weak brandy and water, will tend to promote digestion; but whatever kind of drink is used, the quantity should be small, for it is better to suffer a little from thirst, than to charge the stomach with much fluid. If the patient dine early, he should take a cup of tea or coffee, with bread, in the evening; and a biscuit, with a little negus, or a breakfast cupful of arrow-root, sago, or gruel, about an hour before going to bed. Indeed, many people are as likely to be restless during the night, and have disturbed sleep, if they go to bed without a light supper, as if they had taken a full meal.

There are certain kinds of food generally understood to be difficult of digestion, and which ought therefore to be carefully avoided by dyspeptic patients. The articles of diet considered to be most injurious, are fluid food, as soups, broths, &c.; fat meat, particularly pork and bacon; veal, and other kinds of young meat; salted or smoked meat, or fish; most kinds of fish, more especially salmon; pastry, puddings, cakes, and dishes containing fat or oily substances; cheese, custards, cream, and all preparations of milk; made dishes, and twice-dressed meat; fresh and preserved fruits in general, and new bread. Vegetables ought to be abstained from as much as possible, because they are not so easy of digestion as animal or farinaceous food, and tend to produce flatulency, when the stomach and bowels are in a weakened state. It is improper to drink much liquid of any kind, and malt liquor should be particularly shunned.

The quantity of food is of still greater importance than the

quality; indeed nothing can be more injurious to dyspeptic patients than overloading the stomach; they should bear in mind the saying of Solomon, that "Excess of meat bringeth sickness." Dyspeptics are but too apt to gratify the capricious and morbid cravings which so frequently attend this affection, and thus give the stomach more duty to perform than it is able to accomplish. They forget that strength is not derived from the quantity of food taken, but from that which is properly digested. Dr. Abercrombie makes the following observation: "In the regulation of diet, much certainly is to be done, in dyspeptic cases, by attention to the quality of the articles that are taken; but I am satisfied that much more depends upon the quantity; and I am even disposed to say, that the dyspeptic might be almost independent of any attention to the quality of his diet, if he rigidly observed the necessary restrictions in regard to quantity. It is often indeed remarkable, how articles, which cannot be borne as a part of mixed diet, agree perfectly when taken alone; how a person, for example, who fancies that milk disagrees with him, will enjoy sound digestion upon a milk diet; and how another, who cannot taste vegetables without being tormented with acidity, will be entirely free from acidity on a vegetable diet. The following case occurred to me some time ago, in which this experiment was made in the most complete and satisfactory manner.

"A gentleman, accustomed to moderate, but very comfortable living, had been for many years what is called a martyr to stomach complaints, seldom a day passing in which he did not suffer greatly from pain in his stomach, with flatulence, acidity, and the usual train of dyspeptic symptoms; and, in particular, he could not taste a bit of vegetable without suffering from it severely. He had gone on in this manner for years, when he was seized with complaints in his head, threatening apoplexy, which, after being relieved by the usual means, showed such a constant tendency to recur, that it has been necessary, ever since, to restrict him to a diet almost entirely of vegetables, and in very moderate quantity. Under this regimen, so different from his former mode of living, he has continued free from any recurrence of the complaints in his head, and has never been known to complain of his stomach."

Sir F. Head justly observes, "that almost every malady to

which the human frame is liable, is, either by high-ways or by-ways, connected with the stomach ; and I must own, I never see a fashionable physician mysteriously counting the pulse of a plethoric patient, or, with a silver spoon on his tongue, importantly looking down his red inflamed gullet, but I feel a desire to exclaim, ‘ Why not tell the poor gentleman at once, Sir, you’ve eaten too much, you’ve drunk too much, and you’ve not taken exercise enough.’ ”

It is impossible to assign any rules with regard to the extent of exercise which should be taken, as this must depend on the strength or habits of the patient, and other circumstances. As a general rule, it may be observed, that exercise should not be carried so far as to cause much fatigue, but may safely be continued until gentle perspiration is produced. Neither the body nor mind should be actively exercised until at least two hours after dinner. Dr. Cullen, speaking of the advantages to be derived from exercise, says, “ As a bodily exercise, I can say that walking has good effects. I have always thought it necessary to continue other amusements or business ; and there are several instances of persons, who have long laboured under weakness of the stomach, being cured by watching the concerns of their farm, which obliges them to be much in the open air, and in constant gentle exertion. I have cured weak stomachs by engaging the persons in the study of botany, and particularly in the investigation of our native plants, and in other gentle and long-continued amusements, such as our game of golf.”

Personal cleanliness should be strictly attended to. The patient ought to sponge his body every morning with salt and water, or vinegar and water, and afterwards rub the skin well with a coarse towel. The warm bath will, in most cases, be found serviceable, and, in some constitutions, bathing in the open sea is attended with much benefit. Friction of the body, with a flesh-brush or hair-glove, is useful in all cases.

INDIGESTION FROM IRRITATION, OR CHRONIC INFLAMMATION OF THE STOMACH.—At the commencement of this form of Indigestion, the appetite is generally impaired, but in some cases very little affected, or it may be morbidly increased. Slight feverish symptoms come on in the evening, the pulse becomes sharp, the heat of the skin is increased, the palms of the hands

and soles of the feet are hot, and thirst is present. The tongue is furred or loaded at its root, and the edges and point are red, or it may be clean and preternaturally red; the lips are red and dry, and the mouth and throat are dry on awaking in the morning; the bowels are generally constipated, and the evacuations are dry and scanty; the urine is rather scanty and high coloured; the sleep is not sound, the patient is disturbed by disagreeable dreams, and on rising in the morning feels unrefreshed, languid, and irritable. A gnawing sensation, resembling that produced by hunger, is sometimes felt at the stomach, and is relieved by eating, but generally returns in the course of about two hours, accompanied with a sensation of fulness or distension. The patient may continue in this state for many months, or even years, without experiencing much pain at the stomach; but as the disease gains ground, a sensation of heat is felt after eating, and there is tenderness, or pain, on pressing with the hand over the stomach. The process of digestion is now slow and painful, a feeling of weight and oppression is experienced at the stomach after eating, with general uneasiness, flushing of the face, pulsating headache, quickened pulse, and other symptoms of general excitement. Heartburn, or belching of sour or bitter fluid, and flatulency, are also symptoms of very frequent occurrence.

In the more advanced stages of this affection, a burning pain is frequently felt at the pit of the stomach, sometimes attended with nausea; there is considerable thirst; the tongue is of a dark red colour, or resembles raw meat; or it may be smooth, glossy, or chapped; and, in long continued cases, not unfrequently acquires a fissured or lobulated appearance. The taste is saltish, resembling that of blood, and a scalding sensation is sometimes felt at the point of the tongue. The throat is red, sometimes painful, and little vesicles, or ulcerations, occasionally form in the mouth and throat. The skin is rough and dry, except during the night, when the patient not unfrequently awakes, bathed in perspiration. The pain at the stomach is increased after eating, and often extends to the left shoulder and back. Some patients are occasionally much troubled with palpitations, or strong beating of the heart, others again have violent throbbing of the abdominal aorta, or great arterial trunk of the belly. The temperature of the trunk of the body is rather greater than natural,

but the extremities are generally cold, except occasionally, when the soles of the feet and palms of the hands become exceedingly hot and dry; and the patient is susceptible of the slightest change of temperature. The pulse is small, and rather quicker than natural, and is always considerably accelerated, and sharper, after eating. The countenance is sallow; the body gradually becomes emaciated, and the patient is fretful, low-spirited, and constantly thinking of his ailments. At this advanced stage of the disease, many patients are much troubled with headache and dry cough, which are always increased by the use of stimulating food or drink.

The patient, after suffering an indefinite length of time, with a greater or less number of the symptoms above mentioned, at length recovers, or, if the disease be neglected, acute inflammation of the stomach, or vomiting of blood may supervene; or the bowels, liver, or spleen may become affected, and diarrhoea, dysentery, or dropsy may be the result.

CAUSES. Functional derangement of an organ cannot exist long without inducing organic disease; hence this form of Indigestion is generally the sequel of that which results from debility and functional derangement of the stomach. This organ, after remaining in a weakened state during a longer or shorter period, at length becomes morbidly irritable, congested, and ultimately inflamed. Whether this be a primary affection, or a sequence of functional derangement, is of little consequence in a practical point of view, but it is of the utmost importance to ascertain whether Indigestion depends on simple relaxation of the stomach, or on chronic inflammation, because, as we have already had occasion to mention, the tonic or stimulating treatment requisite in the former case, would certainly aggravate the latter, which, as we shall soon have occasion to show, requires, in several respects, a very opposite treatment.

The inflammatory form of Indigestion arises, in most cases, from the habitual use of intoxicating liquors, and stimulating diet; these causes, more especially the former, excite and irritate the stomach, bowels, and liver, and render this form of the disorder by far the most common. In the lower ranks of life the abuse of spirituous liquors keeps the mucous or lining membrane of the stomach in a constant state of excitement, varying from simple irritation, with an overcharged state of the blood-vessels,

to confirmed chronic inflammation. Various accidental causes might be enumerated, but they are of little consequence compared with those just mentioned; drinking cold fluid when the body is perspiring after violent exercise; the use of strong irritating purgatives, and other stimulating medicines; the repulsion of cutaneous eruptions; the suppression of accustomed evacuations, as the menses, the whites, the discharge from piles, &c., are the most frequent of the occasional causes.

TREATMENT. The most important object in the treatment of this, as well as of every other disease, is to remove the exciting cause on which it depends; without this indispensable precaution, no advantageous result is likely to be obtained from remedial means; hence, if the disease be caused by excess in eating and drinking, these pernicious habits must be discontinued, and low diet strictly enjoined; under these conditions, the efforts of nature, unaided by medical treatment, are often, in mild cases, sufficient to effect a cure. In the more severe cases, where there is much tenderness or pain on pressing with the hand over the stomach, the diet should be confined entirely to farinaceous food, such as arrow-root, sago, gruel, rice, &c.; and cold lemonade, barley water, or similar cooling and demulcent beverages, are to be used as common drink. From six to ten *leeches*, according to the age and strength of the patient, should be applied to the pit of the stomach, and repeated as often as the pain and tenderness return. The bowels are to be regulated by clysters of warm water, or by gentle laxative medicines, such as *magnesia*, *rhubarb*, the *confection of senna*, or *castor oil*. Counter irritation, produced by the *tartar emetic ointment* (see page 26), if persisted in a sufficient length of time, will be found very serviceable; or a large plaster, composed of seven parts of the *compound pitch plaster*, with one part of the *plaster of Spanish flies*, may be applied over the stomach.* To allay irritation of the stomach, narcotic

* The *euphorbium-plaster* is a very useful application for the purpose of keeping up irritation of the skin: it has a place among the formulae of Guy's Hospital, and is prepared in the following manner:—

Take of Burgundy pitch plaster, two ounces,
Euphorbium powder, two drachms,
Common turpentine a sufficient quantity.

The Burgundy pitch plaster being melted, the euphorbium, in fine powder, is to be added, and as much of the turpentine as is required to make the whole of a due consistence.

remedies will be found in many cases very beneficial ; and perhaps the best remedy that can be used for this purpose is the extract of henbane, taken as directed at page 47. In addition to these means, the tepid bath, (at about 95 to 98 degrees of heat) should be used daily, or every other day. Repose, both of body and mind, are necessary, as long as pain or tenderness is felt at the stomach ; but, as the inflammation subsides, gentle exercise in the open air will be proper, and the diet may be made gradually more nutritious ; at first a little beef tea, chicken, or veal broth should be taken, and afterwards a small quantity of solid animal food may be used once a day. No precise rule, however, can be laid down with regard to the quality or even quantity of aliment, which ought to be taken ; the patient should observe carefully the different kinds of food which agree best with his stomach, and should avoid extreme abstinence, as well as eating more than is really necessary, because, if carried too far, abstinence would become a source of irritation to the stomach, and would prove not less injurious than the opposite extreme.

It would be inconsistent with the limits of this work to enter more fully on the treatment and means of preventing Indigestion ; we beg to refer, for much valuable information on the subject, to the excellent and popular works of Dr. James Johnson and Dr. Andrew Combe.

INFLUENZA.

Influenza, or epidemic catarrh, (called by the French *la grippe*,) has generally been observed to commence suddenly, with chills or shivering, alternating with flushes of heat, loss of appetite, great lassitude, and debility : these symptoms were soon followed by pain and a sensation of weight in the forehead, sneezing, a copious discharge of thin acrid fluid from the nostrils, a sensation of rawness along the course of the windpipe, hoarseness, and dry cough. To these were conjoined anxiety and a feeling of oppression about the chest ; pain in the back and knees, and shooting pains in different parts of the body and limbs ; quick and weak pulse, and moist tongue, covered with white mucus.

The abruptness of the attack, the extraordinary debility, the

severe head-ache, accompanied with giddiness, and the flying pains in the back, knees, and various parts of the body, distinguished this affection from common catarrh. (See *Cold in the Head and Bronchitis.*)

Two French historians, Mezeray and Pasquier, described this disease as it appeared at the commencement of the fifteenth century, (1414 and 1427); since that time it has frequently overrun Europe, and has always declared itself in the same sudden manner, and with nearly the same symptoms. The most severe epidemic catarrh of the last century was that of 1781 and 1782, which spread rapidly over all Europe and Asia, and is supposed to have attacked nearly three-fourths of the whole population of the towns and districts which it visited. This disease has appeared three times within the present century; and the last epidemic in 1837, attacked people of all ages and ranks; it cut off, more especially, persons in advanced life, and those who had previously suffered from pulmonary complaints and affections of the heart; and in many cases was associated with a disordered state of the bowels, inflammation of the lungs, pleurisy, oppression of the brain, and rheumatism. The London bills of mortality showed that it carried off three hundred and sixty-four persons between the 17th of January and the 21st of March. But Influenza, though frequently severe and tedious, has not been a dangerous disease, unless when it occurred in elderly and infirm people.

The duration of Influenza varied from three or four days to a fortnight, but, in aged and delicate people, it frequently left considerable debility and susceptibility to cold for many months. It seldom continued longer in any place than six weeks, and generally towards the termination of the epidemic the symptoms were mild, and differed little from those of a common cold.

We are as ignorant of the origin of Influenza as we are of that of any other epidemic. It was formerly understood to be highly contagious, but few medical men at present entertain this opinion. The general supposition appears to be that it depends upon some unknown atmospheric influence. Sydenham was inclined to think that it resulted from "some occult and inexplicable changes wrought in the bowels of the earth itself, by which the atmosphere

becomes contaminated with certain effluvia, which predisposed the bodies of men to some form or other of disease."

TREATMENT. When Influenza appeared in a mild form, scarcely any medicine was required; rest, demulcent drinks, and abstinence from animal food and stimulating liquors for a few days, were sufficient to remove the disease; but in the more severe cases an emetic was found useful at the beginning, followed by mild laxatives. In many cases there was a considerable degree of irritation of the mucous membrane of the stomach and bowels, which was always increased by active purgatives and stimulating food and drink. Blood-letting was almost invariably found to be injurious, and opiates at the commencement of the disease, while feverish symptoms were present, did harm. The most efficacious remedies were small and repeated doses of *ipecacuan* and *James's powder*, a grain of each three or four times a day or oftener; but not carried so far as to produce sickness at stomach. These medicines, when judiciously administered, according to the urgency of the case and constitution of the patient, kept up a slight degree of perspiration, assisted the expectoration, soothed the cough, and tended to correct the irritation of the lining membrane of the alimentary canal. When the feverish symptoms were removed, the *almond emulsion*, with the *acetate of morphine*, were found very serviceable in relieving the cough. (See page 84, No. 57.) A moderate but nutritious diet, with a glass or two of wine, was necessary in order to counteract the debility which, after the disease had existed some time, was in many cases very distressing. In protracted cases, where the strength was much exhausted, small doses of *quinine*, the *infusion of calumba*, *decoction of Peruvian bark*, or other tonic remedies, were required. (See the formulæ in the article on Indigestion, page 388.) Cool, well aired apartments, cooling drinks, and a moderate quantity of bed-clothes were found serviceable, while hot drinks, warm rooms, and a stimulating mode of treatment, aggravated the symptoms.

We have had already occasion to notice, in the article on Asthma, (see page 47,) the excellent effect which sponging the body every morning with cold water, containing a portion of salt or vinegar, has in preventing catarrhal complaints, even where a

strong disposition to them has already manifested itself. Daily ablution with cold water is strongly recommended by nearly all the best authors on these affections, and several distinguished medical men speak of the advantage which they have personally derived from it. Sir Astley Cooper makes the following observation with regard to this practice.

"The methods by which I preserve my own health, are temperance, early rising, and sponging the body every morning with cold water, immediately after getting out of bed, a practice which I have adopted for thirty years; and though I go from the hot theatre into the squares of the hospital, in the severest winter nights, with merely silk stockings on my legs, yet I scarcely ever have a cold. Should it happen that I feel indisposed, my never-failing remedy is one grain of calomel combined with four grains of cathartic extract, which I take at night; with a basin of hot tea about two hours before I rise the following morning, in order to excite a free perspiration, and my indisposition soon subsides."

IODINE.

Iodine was discovered in 1813, by M. Courtois, a manufacturer of saltpetre at Paris. It is obtained from the ash or cinder called *help*, which is procured from burning sea weeds (*algæ*.)

Iodine is principally valued for the extraordinary power it possesses in promoting absorption; hence it is employed in Derbyshire-neck, (bronchocele,) chronic enlargements of the liver, spleen, testicles, uterus, &c. M. Lugol, of the hospital of St. Louis, at Paris, deserves the credit of having first tried this substance on an extensive scale in various scrofulous affections, in which it has been ascertained to be the most efficacious remedy we possess. It is now extensively used in combination with various other substances. The Iodide of iron, in the dose of one or two grains, three times a day, is of great service in obstruction of the menstrual discharge, and the Iodide or hydriodate of potash, in the dose of two or three grains three or four times a day, is much employed in rheumatism, in secondary venereal affections, as eruptions on the skin, nodes, &c.; and also to promote the absorption of the liquid secreted into the chest in

consequence of pleurisy. Dr. Williams states, that as there is apt to be in both these preparations some free Iodine, which he believes to be the chief cause of the unpleasant symptoms which they are sometimes said to produce, it is well to direct the patient to eat a bit of bread or biscuit after each dose: the starch of this combining with the free Iodine, removes its injurious property, and with this simple precaution, he says he has administered both these remedies in numerous instances for a great length of time, without inducing the irritation at stomach and nervous symptoms so commonly ascribed to Iodine.

Mr. Aston Key, of Guy's Hospital, has employed Iodine with great success in the irritable spreading ulcers which occur in persons whose constitutions have been enfeebled by dissipation and other depressing causes. This medicine, he says, when used properly, is a powerful stimulant and tonic; it excites the pulse, and increases its volume; it stimulates the stomach, increases the appetite, and fattens the patient; it gives tone to the extreme vessels and nerves of an ulcer, and prevents the inflamed texture being destroyed by ulceration. He also states that when the skin is pallid, the tongue flabby, the pulse feeble, the nervous system tottering and irritable, the reparative powers of Iodine are seen to most advantage. In such constitutions it is more efficacious in healing ulcers than even the volatile alkali, or bark, or opium.

The Iodide of Potash is frequently used externally in the form of ointment: the Dublin pharmacopoeia orders a scruple of the Iodide to be mixed with an ounce of lard. Ioduretted baths are strongly recommended by Lugol in the treatment of scrofulous affections.

The dose of the tincture of Iodine is ten drops a day, in syrup and water, to be gradually increased to sixty. The preparation of this remedy generally preferred is the hydriodate of potash. Whatever preparation of Iodine is employed, the dose should be small at first and gradually increased, according to the circumstances of the case. When it produces irritation of the stomach or bowels, it should be discontinued for a few days, and then given in smaller doses.

IPECACUAN.

Ipecacuanha is the root of the *Cephaëlis Ipecacuanha*, a plant which grows in the Brazils. The medicinal properties of this root were first made known in Europe by Piso and Marcgrave, towards the middle of the seventeenth century; but it did not attract particular notice, until Helvetius, a physician of Rheims, the grandfather of the celebrated author of the work *De l'Esprit*, employed it with great success in the cure of dysentery. It soon acquired the reputation of being a specific against that dangerous disease, and Louis the Fourteenth, in 1690, purchased the secret from Helvetius for a thousand louis d'or. Ipecacuan still deservedly maintains the reputation of being a valuable medicine in dysentery; and in warm climates, where that disease never ceases to carry on its ravages, no remedy is more extensively employed, although, as we have already had occasion to mention, the majority of British practitioners consider the exhibition of calomel with opium as the more prompt and certain means of cure.

Ipecacuan is well known as a mild and efficacious emetic; for this purpose it is given in powder, in the dose of from fifteen to thirty grains, mixed with a little warm water; or ten grains of it may be administered, combined with one grain of tartar emetic. The *wine of Ipecacuan*, commonly called *hippo wine*, is well adapted for the diseases of children, where emetics are indicated. The dose is one or two teaspoonfuls, repeated at intervals of a quarter of an hour, until vomiting is produced.

Ipecacuanha lozenges generally contain each from a quarter to half a grain of the powdered root, and are much used to promote expectoration in chronic affections of the lungs.

Ipecacuan combined with opium, forms the celebrated sudorific remedy called *Dover's powder*, (see page 222.)

IRON.

Iron, so indispensable to the welfare and happiness of mankind, is, as the great chemist Fourcroy states, perhaps the only metal possessed of medicinal properties, which has no poisonous quality. Indeed, there are few remedial agents of more import-

ance than the preparations of Iron. Many physiologists suppose that the red colour of the blood is owing to an oxide of Iron; and it is well ascertained, that under the use of the preparations of this metal the blood frequently acquires a brighter red colour. The salts of Iron are deservedly considered to be invaluable, in the various chronic affections occurring in connexion with that state of the body called, in medical language, *anæmia*, in which the blood is deficient in quantity, and probably altered in quality. The symptoms which indicate this condition of the system, are a soft flabby state of the flesh, pale countenance, a peculiarly pallid appearance of the lips, general debility, loss of appetite, occasional palpitation of the heart and shortness of breathing on any sudden bodily exertion. This state is most frequently met with in females, and generally in those who are affected with obstruction of the menses (*chlorosis*). The diseases in which the preparations of Iron have been found most serviceable are scrofula, rickets, dropsy, menstrual disorders, and various nervous affections, as epilepsy, St. Vitus's dance, hysterics, asthma, and *tic douloureux*.

In persons of a full habit of body, with florid countenance, in those who have a tendency to inflammatory diseases or apoplexy, and in all cases of chronic inflammation, Iron is not admissible in any form.

Sydenham preferred the filings of Iron to all other preparations of this metal. He says, "I have been fully satisfied, by frequent experience, that the bare substance performs the cure sooner and more effectually than any of the common preparations of it; for busy chemists make this, as well as other excellent remedies, worse, rather than better, by their perverse and over-officious diligence." This attack on the chemists of his time is certainly couched in strong terms; but when we look into the old pharmacopœias and dispensatories, and observe the number of superfluous, uncertain, and inert preparations directed, we need not be surprised at the severe censure of this great physician. The filings of Iron are now, however, very seldom used. The late distinguished professor of *materia medica* at the University of Edinburgh, Dr. A. Duncan, who has done more for this department of medicine than the united labours of all his contemporaries and followers have been able to effect, was of opinion

that the carbonate of Iron, the tincture of steel, and the sulphate of Iron, are the only preparations really necessary, inasmuch as they are sufficient to fulfil any indication required from the salts of Iron.

The subcarbonate, or prepared rust of Iron, has been frequently given in tic douloureux, and other nervous diseases, to the extent of an ounce in the course of twenty-four hours; but though such doses may be given with impunity, it does not appear to be really necessary, under any circumstances, to exceed three drachms a day; and indeed, in most cases where this remedy is indicated, scruple doses, if continued for a sufficient length of time, will be followed by all the good effects which Iron is capable of producing. The method generally adopted is to commence with ten grains three times a day, increasing the dose gradually to the extent of a drachm. In obstinate cases of chlorosis, and in the discharge from the vagina, called the whites, it is often advisable to administer drachm doses for a considerable length of time. In the enlargement of the spleen, known by the name of *ague-cake*, which so frequently follows intermittent fever, we have used this preparation in many cases with great success; and in some cases of chronic enlargement of the liver, we have found it equally efficacious; but in others, which occurred under the same circumstances, and appeared in every respect similar, it produced no beneficial effect whatever.

Many extraordinary cases are recorded of the wonderful effects produced by this and other preparations of Iron, in cases of impotence in men and sterility in women; and in fact, there is every reason to believe, that in many persons affected with debility of the genital organs, these remedies have produced the desired effect, because it has been well ascertained, that all the preparations of this metal exert a specific tonic action on these organs.

Nearly forty years ago, Dr. Adams and Mr. Carmichael of Dublin, revived the theory which had been advanced more than two centuries before, that cancer is a kind of animal fungus, or in other words, that it possesses life, independent of the parts on which its ravages are committed; and the observations of the latter gentleman having led him to believe that worms and other animals, with colourless blood, are destroyed in a shorter

time by carbonate of Iron, than by arsenic, or any other substance, introduced it to the notice of the profession as almost specific in cancer. But this, like every other medicine and method of treatment proposed for that terrible disease, was soon ascertained to be of no avail. Dr. Cruveilhier, one of the most distinguished of the French physicians, says, "For my part, I have used and abused this remedy in cancerous diseases, without the slightest appearance of success."

The tincture of the muriate of Iron, or *tincture of steel*, as it is usually termed, is a very agreeable and convenient form of administering Iron. The ordinary dose is from ten to thirty drops, three times a day, in cold water, or conjoined with an infusion of quassia, gentian, or orange pill; or it may be given once a day, in a glass of soda water. This is considered the most suitable preparation in indigestion, arising from functional derangement or weakness of stomach; but Iron, and all other tonic remedies, are contra-indicated when the alimentary canal is in an irritable condition. In retention of urine, from spasm at the neck of the bladder, the tincture of steel, in small doses frequently repeated, is an excellent remedy. Mr. Cline recommended ten drops to be taken every ten minutes, until some relief was afforded.

The sulphate of Iron (green vitriol) produces sickness at stomach when used in full doses, and should therefore be taken at first in the dose of half a grain, three times a day. It may be used in the following form with great advantage, as a substitute for chalybeate waters.

No. 240.

Sulphate of iron, half a drachm,

White sugar, a drachm and a half.—Mix and divide into twelve powders.

Bicarbonate of soda, half a drachm,

White sugar, a drachm and a half.—To be also mixed, and divided into twelve powders, one of each to be dissolved separately in water, and taken in a state of effervescence.

It may be well to remark, that if any of the preparations of Iron be used for some time, the evacuations from the bowels assume a black colour.

ITCH.

Itch is a well-known contagious disease of the skin, characterised by an eruption of minute vesicles, containing a clear watery fluid, intermixed with small pustules, and accompanied by constant itching, which is aggravated when the patient is warm in bed. The eruption appears on all parts of the body, but is observed principally on the wrists, between the fingers, on the flexures of the joints, and between the hips. The face is the only part which it does not attack. The immediate cause of Itch is the presence of an insect, *acarus scabiei*, which is not situated in the vesicle itself, but at the termination of a small reddish furrow with which it communicates.

Tailors, old clothes men, sempstresses, and the medical attendants and servants of hospitals, are most frequently affected with this filthy disease. In grown-up people, from ten to twenty days elapse between the infection and the breaking out of the eruption; in children it appears at an earlier period, generally from four to six days.

TREATMENT.—The Itch never gets well without treatment. The remedy generally resorted to is sulphur, which seldom, if ever, fails in curing the disorder. The *sulphur ointment* of the shops, or the flour of sulphur mixed with butter or lard, rubbed in five or six times on the parts affected, effectually destroys the acarus. This, however, though a certain, is a very disagreeable method of cure, and is therefore at present in a great measure superseded, by the use of the hydriodate or iodide of potash, which has the effect, according to the experiments of M. Albin Gras, of killing the acarus in a shorter time than any thing else. The best manner of using this remedy is in the form of ointment.

No. 241.

Hydriodate of potash, half a drachm,

Lard, an ounce. Mix. To be rubbed on the affected parts.

M. Emery, of the Hospital of St. Louis, at Paris, recommends the following formulæ, used in friction night and morning, which, he states, has the effect of curing the Itch in less than a week, and does not possess the offensive smell of the common sulphur ointment.

No. 242.

Yellow soap, an ounce,
Common salt, half an ounce,
Sulphur, half an ounce,
Alcohol, a drachm,
Vinegar, two drachms,
Chloride of lime, half a drachm. Mix. This quantity is sufficient for four frictions.

Rags dipped in melted sulphur, while burning, evolve a vapour (sulphurous acid gas), which possesses the power of disinfecting the woollen clothes of patients, if sufficiently exposed to its action.

JALAP.

Jalap is the root of the *Convolvulus*, or *Ipomea Jalapa*, and takes its name from Xalapa, a city of Mexico. It comes chiefly from Vera Cruz.

The powder of Jalap is a certain purgative, and seldom gripes unless when taken in large doses. It acts without producing nausea, or debilitating the stomach, is a safe remedy in all chronic disorders, and when combined with calomel, is the purgative in common use at the commencement of fevers. When reduced to a fine powder, by rubbing in a mortar along with a little sugar, and then combined with two or three grains of calomel, it constitutes an excellent remedy in the bowel complaints of children, particularly when the bowels are infested with worms. Given along with cream of tartar, it is much used for the purpose of carrying off water in dropsy. (See *Cream of Tartar*.)

The dose for a child five years of age is five grains, adding a grain for every year in young people. The average dose for an adult is from a scruple to twenty-five grains.

JAMES'S POWDER.

Dr. James, the inventor of this powder, was a regularly educated physician; he first practised at Lichfield, where he was the friend of the celebrated Samuel Johnson, and afterwards settled respectably in London, where he published a medical dictionary

in 1743, which is dedicated to Dr. Mead. The *antimonial powder* of the pharmacopoeia is an imitation of this empiric remedy, and both these preparations of antimony are used to promote perspiration in inflammatory diseases and fever; but the tartrate of antimony (*tartar emetic*) in small doses is now generally preferred, because it acts with a greater degree of certainty than any other antimonial. The ordinary dose of James's powder, or of the antimonial powder, is from five to ten grains, mixed with a little jelly; but it has been frequently given in much larger doses without producing any perceptible effect.

JAUNDICE.

Jaundice is characterized by a yellow colour of the eyes, skin, and urine; and by the white or clay-coloured appearance of the evacuations from the bowels.

In the short description of the alimentary canal and its functions, at the commencement of the article on Indigestion, we pointed out the importance of the bile in the animal economy. This fluid is secreted by the largest gland in the body, and is poured into the duodenum, or first division of the small intestines, about six inches from the pyloric or lower orifice of the stomach, by a duct formed by the junction of two others, one of which comes from the liver, the other from the gall bladder, a membranous bag, which is attached to the concave surface of the liver, and intended as a reservoir for part of the bile. Now, these biliary ducts are liable to be obstructed from various causes, and whenever it happens that the bile is prevented from reaching the bowels, it is taken up by the absorbent vessels of the liver, carried into the general circulation, and thence sent out of the body by other channels,—part of it is separated from the blood by the kidneys, and discharged with the urine, to which it imparts a yellow colour; while another portion seeks its way out through the skin, which it likewise tinges yellow: hence the term Jaundice, from the French word *jaune*. But sometimes we hear of green, and even of black Jaundice; this of course is a contradiction of terms, yet it shows the various colours which the disease, under certain circumstances, imparts to the skin.

The circumstances which impede the passage of the bile into

the bowels, and consequently produce Jaundice, are various. The obstruction may arise from gall stones in the biliary ducts—from the bile being preternaturally thickened—from enlargements of neighbouring parts—from accumulation of mucus in the duodenum plugging up the orifice of the duct—or, from inflammation of the liver or duodenum, or of the gall ducts themselves. There can be no difficulty in understanding how any one of these causes might completely obstruct the passage of the bile into the intestines; but Jaundice often arises under circumstances which do not admit of any explanation of the immediate cause of the obstruction: for example, it occasionally arises suddenly from violent mental emotions, as intense grief, terror, or a violent fit of rage; sometimes again it makes its appearance slowly, in consequence of long-continued domestic grief, jealousy, or disappointed ambition; it may also be brought on in consequence of the pain and shock given to the nervous system from falls, blows on the head, or on any other part; from the reduction of a dislocation, the amputation of a limb, or the enduring of any other severe surgical operation; from the bite or sting of venomous animals, &c. The occurrence of the disease in consequence of these and similar circumstances has not yet been satisfactorily accounted for, and in fact, the nature of several of the varieties of Jaundice is still little known; cases often occur in which the treatment is on this account rendered very uncertain: indeed it is often necessary to trust almost entirely to the efforts of nature for the removal of the disorder.

The yellow colour is first observed in the eyes, it then extends to the face, neck, and upper part of the chest, and at last the whole skin becomes imbued with it—troublesome itching, or a tingling sensation of the surface of the body, usually accompanies the discolouration of the skin. The urine at first is clear, and of a yellowish tint, but as the disease advances it acquires a saffron colour, and ultimately becomes dark green, or of a mahogany colour, and deposits a thick slimy sediment. The urine, even when it has acquired a very dark colour, tinges the linen of a bright yellow. In general there is a great tendency to constipation of the bowels, the evacuations are scanty, clay-coloured, or white, and voided with difficulty. To these symptoms are added great depression of spirits, watchfulness, a bitter taste in the

mouth, furred and yellow tongue, nausea or vomiting, loss of appetite, thirst, and sometimes shivering, copious perspiration, or dry skin, and perhaps pain at the stomach. To some jaundiced patients all objects appear of a yellow colour, but this is by no means a common symptom of the disease.

The duration of Jaundice is very uncertain, and depends on the cause which gives rise to it, generally fifteen to thirty days elapse before it disappears, and it is often protracted during several months. It is not attended with danger when unconnected with organic disease.

TREATMENT. The present state of our knowledge is very imperfect with regard to many phenomena connected with Jaundice, and until the advance of science throw light on these obscure points, the treatment must be confined chiefly to controlling or removing the symptoms.

Gall stones (*biliary calculi*) are always formed in the gall-bladder, and as long as they remain there are not attended with pain, or any inconvenience, but when they find their way into the gall ducts, particularly if their size happen to be large, they cause Jaundice, and the most excruciating pain; the latter is not constant, but recurs in violent paroxysms, and is said to be more severe than that which results from the most acute inflammation. The pain may come on several days in succession, and continue several hours each time; it is attended with occasional shivering, and profuse perspiration, but not with feverish symptoms. When the paroxysm continues long, it induces extreme lassitude and exhaustion. As soon as the stone escapes from the duct into the bowel, the urgent symptoms cease, and recovery soon follows; sometimes, however, it falls back into the duct, and in this case, though the patient is likewise relieved from his suffering, he has reason to anticipate a recurrence of the disorder at some future period.

The treatment in this species of Jaundice consists in alleviating the pain by means of opiates. Fifty drops of *laudanum*, the third of a grain of the *acetate of morphia*, or twenty drops of *Battley's opiate*, should be given and repeated at the expiration of an hour, or after a longer interval, according to the urgency of the case. A warm bath may be of considerable service, and the patient should remain in it until a slight degree of faintness is produced.

After two or more doses of the anodyne medicine have been taken, a dose of *castor oil* is to be administered, and the bowels are to be kept gently open, throughout the disorder, by mild doses of the same, or of some other purgative. If the bowels be obstinately constipated, which is not unfrequently the case, five grains of *calomel*, with ten or fifteen grains of the *compound extract of colocynth*, should be administered, and the dose repeated as often as may be found necessary. Emetics are seldom required in any form of Jaundice, and when it arises from gall stones they cannot be administered with safety. Warm fomentations, applied constantly over the pit of the stomach, may afford some relief, and effervescing draughts may be given to allay vomiting. If the patient be of a robust habit of body, and the pain very severe, it will be advisable to take from twelve to sixteen ounces of blood from the arm. But our chief reliance is to be placed on opium, or the preparations of it above mentioned; and the dose is to be repeated at fitting intervals, according to the urgency of the symptoms, until the pain is relieved. A point of great importance in the treatment of this affection is to guard against inflammation, which sometimes supervenes from the irritation produced by the stone in passing through the duct. If, therefore, the pain become constant, and be increased by pressing with the hand over the pit of the stomach, while the pulse is observed to be fuller and stronger, no time should be lost in resorting to general and local bleeding, warm fomentations, and saline draughts.

Persons who are subject to indigestion from accumulation of mucus in the stomach and duodenum, are sometimes attacked with Jaundice, in consequence of the extremity of the gall-duct which opens into the intestine being closed up by a thick layer of viscid mucus. In this case the tongue is covered with white mucus; the bowels are constipated, and the usual symptoms of indigestion are present; but there is neither pain nor feverish symptoms. This form of the disease yields readily to active purgatives; six or eight grains of *calomel* at bed-time, and a smart dose of the *black draught*, (page 32, No. 22,) the following morning, will, in general, remove the cause of the disease; and exercise in the open air, a properly regulated diet, and a dose of *tincture of rhubarb*, one or two *compound rhubarb pills*, or any other

warm purgative, taken occasionally, will soon restore the patient to health, and prevent a relapse.

If Jaundice be accompanied with pain or tenderness at the pit of the stomach, and nausea, or vomiting, with aggravation of the pain three or four hours after eating, there is reason to apprehend that inflammation of the lining membrane of the duodenum extended to the gall-duct is the cause of the disease. Here the treatment consists in subduing the inflammation, by means more or less active, according to the urgency of the symptoms. Eight, ten, or more, *leeches*, according to the circumstances of the case, are to be applied over the pit of the stomach, followed by warm fomentations; and they are to be repeated daily until the pain and tenderness are removed; mild doses of the finest *castor oil* are then to be administered, and afterwards the *tartar emetic ointment* is to be rubbed over the stomach. (See page 26.) As long as there is the slightest tendency to inflammation, active purgatives would be improper; and the patient must be confined to low diet and demulcent drinks.

When Jaundice arises from cancerous enlargement of the pyloric or lower extremity of the stomach, or of the pancreas, or from morbid enlargement of any organ or part so situated as to press upon the gall-ducts, and thereby prevent the bile from entering the bowels, no benefit can reasonably be expected from medicine. The Jaundice is then merely symptomatic of organic diseases beyond the reach of treatment.

When Jaundice is symptomatic of liver complaints, the treatment must be such as those affections require.

Females are sometimes affected with Jaundice in the middle months of pregnancy, in consequence of the womb pressing some of the viscera against the gall-ducts. It frequently disappears in the latter months, from the womb changing its bearing and rising higher; at all events it vanishes after delivery. Medicine is of little use in such cases; mild laxatives and lying on the left side are the only means that can be resorted to.

A species of Jaundice, called *yellow gum*, sometimes occurs in children soon after birth, and is supposed to arise from *meconium*, (see page 178,) or viscid mucus clogging the mouth of the gall-duct, and intercepting the passage of the bile into the bowels. Hufeland was of opinion that it sometimes arose from the action

of the atmospheric air on the skin. This affection is in general easily removed by a teaspoonful of *castor oil*, or a grain or two of calomel, and gentle friction with the hand over the belly and right side; but if these means fail, an emetic of *ippecacuan wine* may be administered. Dr. Cheyne states, that if Jaundice be saffron-coloured in children it is fatal.

When Jaundice lasts a long time, and the yellow colour of the skin changes to an olive hue, (*green Jaundice,*) or to a dark brown or mahogany colour, (*black Jaundice,*) Dr. Baillie states that there is generally some incurable organic disease of the liver.

The nature of Jaundice is still but little known, and cases frequently occur where its appearance cannot be satisfactorily accounted for; it is therefore better, under these circumstances, if there be no pain or feverish symptoms, to allow nature to effect the cure, than to administer active remedies, which might produce injurious effects, more especially when we are aware that this is not a dangerous disorder under ordinary circumstances.

KIDNEYS, DISEASES OF.

The Kidneys are liable to various diseases, some of which are of rare occurrence, and their symptoms so obscure, that a description of them here could lead to no practical advantage, and would only tend to puzzle the class of readers for whom this volume is intended. We shall therefore confine ourselves to a brief notice of the affections of these organs which are most frequently met with.

A fit of the gravel, or, in medical language, *Nephralgia*, is caused by the descent of gritty particles like sand, or of small stones, (*renal calculi*) from the Kidney, along the ureter to the bladder. Small stones sometimes reach the bladder without occasioning much pain or uneasiness, but in general they give rise to very distressing symptoms. The patient is suddenly seized with severe pain, in the region of the Kidney, extending along the ureter to the bladder, and even to the point of the penis, and generally accompanied with great tenderness at the part of the belly corresponding with the portion of the ureter in which the stone is arrested in its progress. There is also a dull pain, or sensation of numbness, at the inside of the thigh, and sometimes of the leg,

of the side affected, with painful retraction of the testicle. The urine is passed in small quantity, tinged with blood, or mixed with clots, and there is frequent vomiting, with violent sickness at stomach, and extreme anxiety. The duration of this affection is variable, and depends on the resistance offered to the passage of the stone towards the bladder; as soon, however, as it gets into that organ, the symptoms cease in the same abrupt manner in which they commence. In general, after a longer or shorter time, the stone, with perhaps a considerable quantity of gravelly particles, passes out of the body along with the urine; but sometimes the painful symptoms above described are only a prelude to a disorder of a much more serious nature. The stone, instead of being discharged along with the urine, remains in the bladder, gradually increases in size, and occasions frequent attacks of the most excruciating pain, from which the patient has no means of escaping, except that of submitting to a formidable surgical operation.

TREATMENT. The treatment of this affection should be chiefly directed to two points.

1. To mitigate the pain.

2. To facilitate the progress of the stone from the Kidney to the bladder.

The bowels are in the first place to be freely opened by means of *castor oil*, *calomel*, and *jalap*, or some other active purgative; but if there be much nausea and vomiting, it will be better to administer an *enema*, containing castor oil and common salt. *Opium*, which may be regarded as our sheet-anchor in this affection, is then to be given in the dose of a grain to two grains, and repeated every two or three hours, or at longer or shorter intervals, according to the urgency of the symptoms. When the stomach is very irritable, the best way of administering this remedy is in the form of *clyster*; a drachm of *laudanum*, with half a teacupful of thin starch, may be injected every two or three hours, or at longer intervals, according to the effect which it produces; or a *suppository*, containing two grains of solid opium, may be used. In whatever manner or form opium is exhibited in this distressing disorder, it has the effect of soothing the pain, tends greatly to relieve spasm, and consequently favours the descent of the stone into the bladder. The warm bath should be employed, and after-

wards warm fomentations are to be applied over the abdomen and loin of the side affected. The pain is sometimes so severe, that the perspiration is seen to drop from the patient, and even fainting fits, or convulsions, may be brought on. Great languor and debility necessarily follow this extreme suffering, care must therefore be taken to give wine, brandy and water, and other stimulants, in quantities suited to the degree of exhaustion. Stimulating diuretic remedies are not to be given, but the patient may drink freely of linseed tea, decoction of marsh-mallow, or other demulcent drinks.

INFLAMMATION OF THE KIDNEYS (*Nephritis*) may arise from exposure to cold and wet; strains of the back and loins; blows and falls; hard riding; over-doses of Spanish flies, copaiva, corrosive sublimate, or other acrid substances; or it may proceed from inflammation of the bladder, the inflammatory action being transmitted along the ureter to the Kidney; but by far the most frequent cause is gravel lodged in the Kidneys, or in the ureters. It is seldom met with until after the middle period of life, and occurs most frequently in gouty habits, and in those subject to gravel and indigestion.

Inflammation of the Kidneys is in no other way to be distinguished from the disorder above described, (*Nephralgia*) than by the pulse being full and hard, the tongue foul, the thirst urgent, the skin hot and dry, and in a word, by the presence of the usual symptoms of inflammatory fever. But, though these affections closely resemble each other, it is nevertheless of the greatest importance to distinguish clearly between them, because the treatment necessary for the one would be highly injurious to the other.

To mistake a fit of the gravel for colic, would be of comparatively little consequence, as the treatment of both is conducted nearly on the same principle; but if opium and other stimulating remedies, so very serviceable in these disorders, were given to the same extent in Inflammation of the Kidneys, or in any other acute inflammatory disease, all the symptoms would soon be aggravated, and the formation of matter, or mortification, might be the result. We would therefore impress forcibly on the minds of those who may be under the necessity of administering medicines in the absence of medical men, never to give stimulating remedies of

any description, without carefully ascertaining that no inflammatory action is going on.

In the disease called, in common language, brain fever, the inflammation may be confined to the membranes which surround the brain, or be seated in the brain itself; and in like manner, it may attack the substance of the Kidney, or only its capsule and the surrounding cellular membrane; but, though medical men may be acquainted with these and similar distinctions, yet for all practical purposes, it is sufficient to know the organ in which the inflammation is seated. It has been ascertained of late years that the inflammatory symptoms are generally exceedingly severe, when the capsule of the Kidney is affected; but in the great majority of cases, the inflammation is comparatively mild, (sub-acute) and confined to the substance of the organ. In the former case, a violent burning pain will be felt in one or both loins, with urgent symptoms of inflammatory fever, requiring general and local bleeding, and the most powerful remedies generally resorted to for the purpose of subduing inflammation. In the latter case, though the pulse be hard and more frequent than natural, the tongue furred, and the temperature of the skin increased, yet the pain is not of the same burning and pungent character, but dull, heavy, and not accompanied with so great a degree of heat at the region of the Kidney. Here, the treatment is to be conducted on the same principles, but the inflammatory symptoms, being much milder, may be subdued by less energetic measures. In general it is necessary to take blood from the arm to the extent of ten or twelve ounces. After depletion, the patient is to be placed in a warm bath, and afterwards large warm poultices are to be applied over the loins. The bowels are to be kept open by occasional doses of *castor-oil*, or a little *rhubarb and magnesia*. The patient must remain in bed, and be confined to low diet and demulcent drinks. If further depletion be found necessary, from ten to fifteen *leeches* may be applied over the loin, or *cupping* may be resorted to; and the local bleeding is to be repeated until the pulse becomes soft and less frequent, and the skin cool. If the disease be caused by gravel, the pain may continue even after the inflammation has been removed; in this case *opium* should be administered as in a fit of the gravel. The patient must still be carefully watched, and if inflammatory action recommence, the

same means must be again employed in order to subdue it; and the *extract of henbane*, in doses of three grains, is to be substituted for the opium. Blisters are contra-indicated in this affection.

Those who have once suffered from Inflammation of the Kidneys, or from a fit of the gravel, are very liable to be again attacked with these complaints; but the risk of a recurrence may be greatly diminished by adopting suitable regimen and diet: the latter should be mild and easy of digestion, all stimulating liquors are to be abstained from, exposure to cold and wet should be carefully avoided, and moderate but regular exercise ought to be taken in the open air.

The most judicious treatment frequently fails in conducting Inflammation of the Kidney to a safe termination; the disease in many cases assumes a chronic form, or terminates in suppuration. Inflammation, whether acute or chronic, if caused by gravel impacted in the Kidney, often terminates in the formation of matter; in the former case, when the symptoms have been protracted beyond the seventh or eighth day, rigors or shiverings supervene, the pulse becomes softer and fuller, the pain dull, heavy and throbbing, with a sensation of weight at the loins, and matter is passed along with the urine. Inflammation of the Kidney may assume a chronic form from the commencement, or may be the result of an acute attack; in either case the symptoms are much less severe than those already described as constituting the acute, or sub-acute form. A heavy uneasy sensation is felt at the loins, which is attended with dull pain; after any unusual bodily exertion, or indulgence at table, the feverish symptoms are altogether absent, or only experienced on these occasions; but the urine is much changed in appearance; it assumes a brown or reddish colour, and deposits particles of sand, or small clots of blood, or may be thick and opaque from the presence of mucus, and is ultimately mixed with matter (pus); the patient then becomes gradually emaciated, hectic symptoms come on, and the general health gives way.

In chronic or protracted cases it will be advisable to employ leeches, or cupping, from time to time, according to circumstances; a seton may be placed in the loins, or a large strengthening plaster may be applied. Mild laxatives are to be taken when the bowels require to be opened. Much benefit may be

derived from the infusion of *buchu leaves*, (see page 99) or from the decoction of *pareira brava*, (see page 57) with the addition of a little carbonate of soda; the tepid bath occasionally may also be used with advantage.

KREOSOTE.

Kreosote or Creasote is an oily, colourless, transparent liquid, discovered by M. Reichenbach; it is prepared from tar, and has a peculiarly pungent smoky smell, and an acrid burning taste.

Kreosote has been found useful in checking spitting of blood from the lungs, and in cases of sickness and vomiting dependent on pregnancy, or connected with nervous and hysterical symptoms; it has also been recommended as a preventive of sea-sickness. The dose is one drop three or four times a day, formed into a pill with liquorice powder and mucilage, or given in camphor mixture, and may be gradually increased to eight drops.

A small portion of lint, or soft linen rag, moistened with Kreosote, placed in the hollow of a decayed tooth, has an astonishingly rapid effect in allaying the pain, and is deservedly considered the best local application yet discovered for toothache.

One drop of Kreosote mixed with from two to six ounces of water, according to the effect produced, is a useful lotion in various kinds of tetter, and other affections of the skin, and has also been employed with considerable benefit in scrofulous and syphilitic sores.

An ointment composed of half a drachm of Kreosote, mixed with an ounce of lard, is much employed in mild cases of ring-worm.

LEAD.

The acetate or sugar of lead is the only preparation of this metal used internally; from its astringent and sedative properties it is considered a powerful remedy in checking profuse bleeding from the lungs, womb, and other internal organs; we have given it repeatedly in urgent cases of hæmorrhage, to the extent of ten grains, in the course of twenty-four hours, mixed with a little distilled vinegar; two or three drops of Battley's opiate are

usually given with each dose. This salt has been also used with great advantage, combined with opium, in cases of chronic dysentery and diarrhoea. Twelve grains to a scruple of it dissolved in a pint of water, with the addition of a little vinegar, are used externally as a lotion to inflamed surfaces; and three grains to an ounce of water form a good injection in gonorrhœa. Goulard water, which is made by mixing a drachm and a half of extract of Lead (Goulard's extract) with a pint of water, and a tablespoonful of spirit, is much employed as an application in superficial inflammation.

LIME.

Lime-water is prepared in the following manner:—"Take of Lime half a pound; water twelve pints; upon the Lime, first slackened with a little of the water, pour the remainder of the water, and shake them together: then immediately cover the vessel, and set it by for three hours; afterwards keep the solution with the remaining Lime, in stopped glass bottles, and when it is to be used, take from the clear solution." Lime-water is useful in indigestion, attended with acidity at stomach, is sometimes taken in protracted cases of purging, (diarrhoea) and in the last stages of dysentery. The dose is one or two pints daily, in milk —ten ounces of it contain only four grains and a half of Lime.

Lime-water is employed as an injection in *leucorrhœa*, (whites) and is applied as a lotion to indolent ulcers.

Lime was formerly much employed in gravel complaints, and constituted the most active ingredient in Mr. Stephens's remedy for the stone, the secret of which was purchased by parliament in 1739, for £5000. This nostrum was composed principally of burned egg-shells. The committee of professional men appointed to inquire into its merits, gave it to a patient with stone in the bladder; he was soon relieved, and the stone could no longer be felt; but the patient died some time afterwards, and on examining the body, the stone, instead of having been dissolved, was found lodged in a pouch communicating with the bladder.

The chloride of Lime, well known under the name of *Labarracque's disinfecting fluid*, has a powerful effect in decomposing and rendering harmless the putrid effluvia arising either from

diseased or decomposing animal matter, and as a disinfecting agent stands unequalled. Hence it is extensively employed for the purpose of purifying sick rooms, the wards of hospitals, crowded ships, the cells of gaols, and in a word wherever it is necessary to destroy infectious effluvia, or to correct offensive odours.

A weak solution of the chloride of Lime is much used as a lotion for cancerous or other foul sores.

LIVER COMPLAINTS.

ACUTE INFLAMMATION OF THE LIVER.—Inflammation may attack the substance of the Liver, or may be confined to the peritoneal membrane, with which it is covered; but in the great majority of cases, both these structures are affected at the same time. The disease commences with a sense of chilliness, or shivering, followed by hot and dry skin, full and hard pulse, thirst, nausea, and, generally, bilious vomiting. The tongue is white, or coated with yellow fur, and the patient complains of a bitter taste in the mouth, the bowels are generally constipated, though sometimes there is bilious purging; the urine is scanty, high coloured, and deposits a copious brick-coloured sediment. Indeed the general symptoms can scarcely be distinguished from those of bilious fever. When the inflammation is deep seated, and confined to the substance of the liver, the pain is dull; but when it extends to the surface of the organ, or is seated in the peritoneal covering, the pain is then acute, and augmented by coughing, drawing in a full breath, lying on the sound side, or by pressing with the hand under the ribs at the right side, either in front or behind, towards the spine. When to the above symptoms are added jaundice, pain at the top of the right shoulder, and swelling at the region of the liver, this cannot be mistaken for any other disease; but these signs, even in the most severe cases, are sometimes entirely absent.

Acute Inflammation of the Liver, when not neglected at the beginning, generally ends favourably between the seventh and twelfth day from the commencement of the disease, and is usually followed by bilious purging, a copious sediment in the urine, severe itching of the skin, or bleeding from the nose.

When the inflammation terminates in the formation of an abscess, which is not an uncommon occurrence in warm climates, the pain becomes more acute, and is accompanied with a sensation of throbbing; there is a troublesome dry cough, and, in many cases, hurried breathing, the pulse, though still full, becomes softer, the palms of the hands are distressingly hot, the sleep is disturbed, fits of shivering, alternating with profuse perspiration, are experienced; and all these symptoms are aggravated towards night. In some cases, as soon as the matter begins to form, all the feverish symptoms abate, and the pain gradually diminishes, but the swelling continues, and the chills or shivering alternating with perspiration never fail to be experienced. This termination is generally fatal, either in consequence of the matter remaining confined in the liver, or by the abscess bursting into the cavity of the belly. But it sometimes happens that the abscess points externally, and the aid of the surgeon is required to give vent to the matter; or it bursts spontaneously, and the patient recovers. Sometimes again, the matter escapes from the body through other channels, and the patient is thus rescued from death. The resources of nature in warding off the fatal event in various diseases, when art can be of no avail, are truly wonderful. We have a striking illustration of this in the process which is sometimes set up to prevent abscess of the liver from bursting into the cavity of the belly, an accident which would inevitably prove fatal. The approach of the abscess to the surface of the liver causes inflammation of the enveloping serous membrane; albumen is in consequence thrown out upon its surface, becomes organized, and forms a bond of union between the liver and adjacent parts. As soon as this adhesive process is completed, ulceration commences, and gradually goes on until a communication takes place between the abscess and a neighbouring organ. The matter of the abscess may in this manner find its way into the large or small intestines, and be discharged by stool, or may pass into the stomach and be vomited; and sometimes it works its way upwards through the midriff into the bronchial or air tubes of the lungs, and is thrown up by coughing—in the latter case the patient expectorates matter during a month or two, until the abscess is healed.

Inflammation of the Liver is frequently connected with the

fevers of tropical countries, and, in a more or less intense form, is often associated with dysentery, and greatly increases the danger of these formidable diseases.

CHRONIC INFLAMMATION OF THE LIVER is frequently met with in temperate climates, and is much more common in inter-tropical countries than the acute form of the disease. It is sometimes a sequence of the latter, but in most cases it comes on gradually, and is at first scarcely noticed by the patient. Pain in the region of the liver is the principal symptom in the chronic as well as in acute form of the disease; in the former it is dull, heavy, and increased by pressing with the hand over the part, by going quickly up stairs, riding on horseback, and in fine by any kind of active exercise; it is also aggravated by lying on the left side, or by any excess in eating or drinking, and in some cases may not be felt during many months, unless under the above or similar circumstances. Cough is only an occasional symptom when the inflammation is acute, whereas the chronic form of the disease is almost invariably accompanied with a short dry cough; and quick walking or any unusual exercise brings on hurried and difficult breathing, and perhaps a fluttering sensation at the heart. The skin and eyes acquire a slightly yellow tinge, the evacuations from the bowels have occasionally a white or clay-coloured appearance, indicating a deficiency of the biliary secretion, while at the same time the urine is scanty, high coloured, and deposits a copious sediment; and when the disease is of long standing, the liver is generally observed to be unnaturally large. The symptoms, however, are sometimes so obscure that the only indication of the disease observed by the patient is a dull pain, or an uneasy sensation, under the ribs at the right side. In many cases the first symptoms noticed are a yellowish colour of the skin and of the whites of the eyes; the unnatural appearance of the evacuations from the bowels above mentioned, and the saffron-coloured urine depositing a brick dust-like sediment. If the right side be examined, the liver will probably be found slightly enlarged, and tender when pressed upon; but when not touched, the patient only experiences an uneasy sensation of weight at the part, and is unable to sleep when lying on the left side.

In a more advanced stage of the disease the pulse is permanently quicker than natural, there is a dry shrivelled state of

the skin, which is sometimes affected with severe itching, without any eruption ; and there is generally an aggravation of the pain, accompanied with slight feverish symptoms, towards night.

Persons affected with chronic Inflammation of the Liver, or any of the chronic disorders to which this organ is liable, are occasionally troubled with depression of spirits, and in some patients this symptom is at times extremely distressing. Trifling circumstances, which in a state of health would have given no uneasiness, are often, when the liver is diseased, the source of great mental suffering ; and we have heard patients, when the fit of despondency was over, express their surprise that affairs of little moment should have given them so much uneasiness. Some individuals find this dejected state of mind so intolerable, that they seek relief from wine or spirits,—others again have recourse to opium ; but, though stimulants may give temporary relief, they never fail to aggravate the disease. Another symptom accompanying chronic Liver Complaints, is a morbid sensibility of the nervous system, which often causes a very marked alteration in the temper of the patient ; he becomes fretful, easily excited, and gives way to sudden fits of passion. This morbid irritability of temper is particularly remarkable in those who have resided long in warm climates.

The duration of this disease is very uncertain,—it generally advances slowly during several years, and then terminates fatally ; but recovery frequently takes place when proper treatment is adopted early, and the liver, even when enormously enlarged, is sometimes reduced to its natural size in the course of a few weeks. The patient, however, ought to bear in mind that he cannot expect to derive much benefit from any remedial means, however judiciously prescribed, unless he has resolution to overcome the habits of indulgence which may have brought on the disease, and by which it would certainly be kept up and increased.

The formation of an abscess in the liver is more frequently the result of chronic than of acute inflammation, and often takes place unknown to the patient, or his medical attendant. The first indications of this dangerous state are rigors or shivering in the evening, followed by quick pulse, restlessness, heat of the palms of the hands, and in a word the usual symptoms of hectic

fever. The patient then becomes gradually emaciated, and after a longer or shorter period, sometimes several months, he sinks completely exhausted. But this is not the only kind of disorganization induced by chronic inflammation; the liver frequently becomes indurated, or gradually augments in volume until it is sometimes increased to more than twice its natural size, and incurable dropsy is the certain consequence. In other cases again, the entire bulk of the liver is converted into a soft, fatty mass, resembling *adipocere*, but this state cannot be recognized by any symptoms during life: it is generally connected with pulmonary consumption, occurs more frequently in temperate than in warm climates, is often met with in young persons, and in those who have not been addicted to drinking or other bad habits.

CAUSES. There can be no doubt that a predisposition to Inflammation of the Liver is acquired by long residence in hot climates, and it is also certain, that the prejudicial effect of heat in producing this disease, is greatly increased in the East and West Indies and other inter-tropical countries, by the intemperate habits of Europeans, many of whom, without taking sufficient exercise, or attending to the state of their bowels, indulge in eating high-seasoned food, and drinking wine and spirits. Few persons can long withstand the united influence of intemperance and the constant action of excessive heat; indeed, so powerful is this last in producing disorders of the liver, that a great proportion of the European residents, whose habits are temperate and regular, are more or less affected with disorders of this organ, which appears to be even more vulnerable in warm climates than the lungs are in Great Britain. Acute Inflammation of the Liver is rarely met with in the temperate parts of Europe; but the insidious and dangerous chronic form of the disease above described, is very prevalent in cold or temperate, as well as in hot climates, and in this country is chiefly caused by abuse of spirituous liquors. The *exciting causes* of this disease are the same with those of inflammation in general, such as blows, falls, or other external injuries; exposure to cold when the body is fatigued or over-heated; and in this class of causes we must admit diseases of other organs, for example, when the stomach and bowels are inflamed, we know that the liver generally participates in the disorder; and indeed, when we consider that these

organs are so intimately connected, being all engaged in the important function of digestion, we cannot be surprised at the influence they exercise over each other when in a state of disease. We have already mentioned that diseases of the liver frequently follow as a consequence of, or are associated from the commencement with, dysentery, fever, and pulmonary consumption.

TREATMENT. The treatment of acute Inflammation of the Liver, though sufficiently simple, must be prompt and active. At first it may be difficult to ascertain whether the inflammation be seated in the liver, or in neighbouring parts; for example, when it attacks the external surface of the organ, the pain is acute, extending sometimes to the breast-bone, and increased by drawing in a full breath; indeed, the symptoms so closely resemble those of pleurisy, that the most experienced physician might readily mistake the one disease for the other; but even were this mistake to be committed, no harm would accrue, because the treatment of both these diseases is conducted on the same general principles. We are therefore to employ active measures as soon as we have ascertained that acute inflammation has commenced, and are not to allow the disease to gain ground, because we cannot tell the exact spot in which it is seated.

If the patient be young, strong, and full-blooded, or if the disease have arisen from raising a heavy weight, from falls, blows, or other external injuries, and indeed in all cases where the pain is severe, and the inflammatory fever high, blood should be drawn freely from the arm, to the extent of at least thirty ounces. The next step to be taken in this, as in all inflammatory affections, is to clear out the bowels; and much depends on the early administration of purgatives, especially in the more severe forms of the disease, so frequently met with in warm climates. The medicines generally used for this purpose are from five to ten grains of *calomel*, either combined with a scruple of *jalap*, or followed by an infusion of *senna leaves*, with *Epsom or Rochelle salts*. The region of the liver is to be covered with *warm poultices* of linseed meal, marsh-mallows, or bread and milk; or chamomile flowers steeped in hot water and wrapped in flannel, may be used; and four or five hours after the bleeding, from thirty to forty leeches are to be applied over the seat of the pain. As a powerful auxiliary to these means, a tablespoonful of the following mixture should be

given every two hours, or at shorter intervals, if a slight degree of nausea be not produced.

No. 243.

Tartar emetic, four grains,
Tincture of henbane, two drachms,
Water, six ounces. Mix.

The bilious vomiting, which is often a troublesome symptom at the onset of the disease, is generally arrested by blood-letting; otherwise the above mixture would be contra-indicated. In warm climates the disease sometimes advances rapidly, and the fate of the patient is decided in the course of a few days; the inflammation must therefore be closely watched, and if the above means produce only a temporarily good effect, the lancet should be again employed, and the blood allowed to flow from a large orifice, until paleness of countenance, weakness of the pulse, and a degree of faintness, indicate that a decided impression has been made upon the system. The local bleeding is to be also repeated. These energetic measures are to be used in order to check the violence of the disease within the first twenty-four hours; beyond that period general bleeding is comparatively of little advantage. The subsequent treatment consists in the frequent application of leeches to the most painful part of the side, the occasional administration of mild purgatives, assisted by emollient injections, together with the tartar emetic mixture, the depressing action of which has an excellent effect in subduing inflammation. The number of leeches to be employed, and the frequency of their repetition, must depend on the obstinacy of the inflammation and the strength of the patient. When, by these means, the symptoms are considerably abated, tepid baths may be employed with great advantage, the water being kept at the same regular temperature, and the patient should remain in it at least an hour each time. On the fourth or fifth day of the disease it is advisable to have recourse to counter-irritation, either by the application of a *large blister*, or by rubbing in the *tartar emetic ointment*. (See page 26.) Sir George Ballingall recommends a succession of blisters, rather than keeping the part discharging in the usual manner, by stimulating ointments. The diet should be thin, light, and of the mildest description; as arrow-root, sago, toasted

bread dissolved in boiling water, or weak chicken broth, and given in small quantities. The drink must be of the same bland nature, as water, in which toasted bread has been boiled, barley water, clear whey, &c.

When the remedies employed produce the desired effect, the feverish symptoms abate, the tenderness, sense of weight, and painful tension under the false ribs diminish, and the swelling subsides. If on the other hand the inflammation terminate in the formation of an abscess, which sometimes takes place in spite of the most judicious treatment, the swelling and sense of weight continue, the face is occasionally flushed, frequent shiverings take place, and the other symptoms already mentioned as indicative of the occurrence of this dangerous accident, are experienced. All that can then be done is to support the patient's strength by a more generous diet, with a moderate quantity of wine, and small doses of quinine, or the infusion of calumba-root; and if the abscess point externally, it should be opened early. This operation, however formidable it may appear, is generally successful; the matter continues to flow from the wound during several weeks; at length the discharge gradually ceases, and the part heals. But if the patient be advanced in life, or greatly emaciated, or if his constitution be much impaired by long-continued habits of intemperance, the chance of recovery is of course greatly diminished.

In the East and West Indies the exhibition of mercury was formerly considered an indispensable part of the treatment of acute Inflammation of the Liver, and a strong prejudice still exists in favour of this remedy, among British practitioners in inter-tropical countries. Some give calomel in large doses, (twenty grains every night at bed-time,) others again prefer using it in smaller doses, frequently repeated, (four or five grains conjoined with from a quarter of a grain to a grain of opium, every four or five hours,) and continued from the commencement of the disease until the mouth become sore. We have given calomel repeatedly, either alone or combined with opium, and have invariably found that where profuse salivation was induced, the patient recovered; but we are convinced, after carefully watching the effects of calomel in numerous instances, that during the acute stage of the

disease, that is to say, while the inflammatory fever and pain of the affected organ continue, it is impossible to affect the system with the strongest doses of this or any other preparation of mercury; and so far from mercurial remedies having the effect of overcoming or controlling the violence of the inflammatory action, they rather tend to increase it, more especially when combined with opium; and indeed, we have no occasion to be surprised at this, when we consider that the latter remedy is a direct stimulant, while calomel, blue pill, and other preparations of mercury, are well understood to possess the effect of stimulating, or in other words, of increasing the functional action of the liver. If the liberal use of mercury had the effect of preventing this disease from terminating in suppuration, we should not hear of so many cases of abscess of the liver; for in our Indian possessions, the various preparations of this mineral are administered with no sparing hand. We have known the formation of matter to take place in several instances, while the system was under the influence of mercury; and it is a curious fact, that in such cases, salivation never takes place, although the breath has the mercurial odour, and the gums are tender, the teeth even sometimes being loose in their sockets. On the third, fourth, or fifth day of the disease, when the high inflammatory action has ceased, and the patient's strength is considerably diminished by the repeated depletion and lowering treatment above directed, salivation may be easily induced in the course of from twenty-four to thirty-six hours, by small and frequently repeated doses of calomel; and we will venture to assert that salivation may be thus induced at as early a period of the disease, as if this remedy had been taken in large doses from the commencement. Affecting the system with mercury at this advanced stage of the disease, has the effect, according to some authors, of removing accumulations of acrid bile, diminishing congestion of blood, and preventing the inflammation from passing into the chronic form; but as these indications may be as effectually fulfilled by an occasional dose of five grains of calomel, followed by an infusion of senna leaves with salts, counter-irritation, proper regimen, and strict attention to diet, we see no necessity for having recourse to a measure which when pushed to the full extent is to many patients exceedingly distressing, and

from the effects of which, some constitutions never altogether recover.

In the *treatment of Chronic Inflammation of the Liver*, we never have occasion to resort to general blood-letting; but local bleeding, by the application of ten or twelve leeches to the region of the liver, every third or fourth day, is in most instances necessary, and should be continued until the pain and tenderness are considerably relieved. Counter-irritation is then to be employed, either by the repeated application of blisters, or by rubbing in the tartar emetic ointment; in long protracted cases, the insertion of a seton, or the application of an issue, has been found advantageous. The bowels are to be carefully regulated by mild laxatives, such as one or two grains of *calomel* at bed-time, followed in the morning by a small quantity of the infusion of *senna leaves* with *Rochelle salts*, or gentle doses of *lenitive electuary*. If the patient be not relieved by these means, it will be advisable to have recourse to minute and frequently repeated doses of mercury: half a grain of blue pill, combined with a grain of the extract of henbane, should be given three times a day, during a longer or shorter period, as the case may require. In the chronic form of the disease, we cannot expect to do much in a short time, and must therefore steadily persevere with the above measures, until the patient is restored to health. It is in most cases necessary to continue these minute alterative doses of blue pill for a considerable length of time, sometimes several months; but in this manner we secure all the beneficial effects of mercury, in a mild and gentle way, whereas in large doses it excites the liver, and produces a degree of irritation of the system which is decidedly injurious.

A foot-bath composed of three gallons of water, at the temperature of 96°, mixed with two ounces of nitric acid, and one ounce of muriatic acid, used every night for half an hour, at bed-time, is strongly recommended by several distinguished East Indian medical men; and sponging the body with a wash of the same nature has also been found serviceable.

Dandelion is often prescribed in chronic Liver Complaints, but we have never known either good or harm result from its use.

The most frequent cause of this disorder in Great Britain, is long-continued stimulation of the stomach and liver, by the inor-

dinate use of fermented liquors, and indulging in eating rich and highly-seasoned food; and the great obstacle to recovery is, in most instances, the continuing of these bad habits. The principal indication is to remove the exciting cause; and in order to fulfil this, the diet should consist of the mildest and least irritating articles of food, and every description of strong liquor ought to be entirely abstained from. Without the strictest attention to regimen and diet, the patient will greatly deceive himself, if he expect to derive permanent benefit from the above, or any other remedial agents; and if he obstinately persist in his intemperate habits, the disease will gradually gain ground, until chronic jaundice and general dropsy be brought on, and after lingering some time, death at last puts an end to this miserable state of existence.

Those who have contracted the disease in tropical countries, should remove, if possible, to a more temperate climate—many patients have been completely restored to health during the voyage to Europe.

One of the most common structural diseases of the biliary organs, in temperate climates, is the hardened or tuberculated state of the liver, which usually arises from drinking spirits. This affection is rarely met with in early life, or in females; it is attended with little or no pain, although there is generally a feeling of uneasiness at the right side. On careful manual examination, the liver, in many cases, is found harder than natural, and knotted on its surface; the skin and eyes gradually become jaundiced, the legs are affected with dropsical swelling: this is soon followed by dropsy of the belly, which quickly carries off the patient.

This state of the liver is little, or not at all, benefited by any kind of medicine. Mercury does no good, but, on the contrary, has been found injurious. Iodine is the only remedy likely to be of service; it may be used externally in the form of an ointment composed of half a drachm of iodine mixed with an ounce of lard, as recommended by Dr. Abercrombie.

CONGESTION OF THE LIVER. The liver is sometimes so overcharged with blood that it becomes considerably increased in size, and may be felt projecting below the ribs, giving rise to a sensation of distension, weight, and sometimes considerable ten-

derness, or pain, with slight feverish symptoms. This gorged state of the organ may come on suddenly, and at first appears alarming; but the application of twenty or thirty leeches over the swollen part of the side, and a smart dose or two of the black draught, (page 32,) with a quarter of a grain of tartar emetic, generally causes it to disappear rapidly: it may, however, if neglected, terminate in Inflammation of the Liver.

After remittent fever, or protracted cases of ague, and during convalescence from the acute diseases of warm climates, the liver is occasionally found enlarged, from an increased quantity of blood in its substance; and though this causes an uneasy feeling of weight at the side, and sometimes a yellowish tinge of the skin and eyes, yet there is neither pain nor feverish symptoms, and the pulse may even be below the natural standard. The treatment which we have found most efficacious in removing this form of congestion, consists in the administration of *prepared rust of iron*, in the dose of twenty to thirty grains, twice or thrice a-day, during a fortnight or three weeks, aided by purgative doses (five to ten grains) of Socotrine, or Barbadoes aloes, and regular exercise on horseback.

CHRONIC PAIN AT THE RIGHT SIDE. Many persons are affected with pain at the region of the liver, which becomes, at times, exceedingly severe, without being accompanied by symptoms of general excitement or swelling. It generally occurs in females, but whether it be of a purely nervous character, or the effect of partial congestion, is not known. This affection, though sometimes very distressing, is not attended with danger: in some instances, after continuing several years, and obstinately resisting every method of treatment, it has gone off entirely without any perceptible cause. It is more frequently removed by a course of the rust of iron, with aloetic purgatives, as above directed, and regular exercise in the open air, than by local bleeding and mercury.

TORPOR OF THE LIVER, or deficiency of the biliary secretion, is indicated by the evacuations from the bowels being more or less whitish or clay-coloured, by languor and depression of spirits, capricious appetite, impaired digestion, languid pulse, a sluggish state of the bowels, and sometimes giddiness or headache; there may be also a yellowish tinge of the eyes and skin.

A *blue pill*, or a grain or two of *calomel*, either alone, or combined with from three to five grains of the *extract of henbane*, every night at bed-time, followed in the morning by an infusion of senna leaves with salts, are the remedies usually employed to restore the healthy function of the liver.

EXCESSIVE BILIARY SECRETION. This state of functional derangement of the liver has been already noticed in the articles on diarrhoea and common cholera. (See pages 215 and 147.)

LUNAR CAUSTIC.

Lunar Caustic, or Nitrate of Silver, has been used internally, in the dose of a quarter of a grain made into a pill with bread-crumb, given three times a day, gradually increased to five grains, in cases of epilepsy, St. Vitus's-dance, angina pectoris, and indigestion; but it does not appear to have been attended with much success, and, in many cases, has produced the effect of imparting a permanent purple or slate colour to the skin. Externally a solution of from five to ten grains, in an ounce of water, has been used with much benefit in cases of irritable ulcers: the mode of applying it is by means of a bit of lint, fixed to the end of a probe, or with a hair pencil. A weaker solution is an excellent application in purulent ophthalmia, (see page 292,) and is sometimes used as an injection in chronic gonorrhœa. It is employed as a caustic to destroy chancres on their first appearance, and in strictures of the urethra it is frequently applied at the end of a bougie, with great advantage. Applied round the inflamed surface in erysipelas, it often has the effect of arresting the progress of the disease, (see page 279.) Mr. Higginbottom, of Nottingham, has well illustrated the great advantages to be derived from the external use of this remedy in various inflammatory affections.

LUNGS, INFLAMMATION OF. (*Pneumonia.*)

Inflammation of the Lungs, (*Pneumonia,*) like all other inflammatory diseases, is generally ushered in by the usual symptoms of fever. The patient is first attacked with a fit of shivering, which is soon followed by hot skin, flushed face, quick pulse, and

the characteristic symptoms of the disease, namely, pain, more or less severe in some part of the chest, quickened and oppressed breathing, with cough and reddish-coloured expectoration. When the substance of the lungs only is inflamed, the pain is dull and heavy, or there is a sensation of heat and weight in the chest, without pain; but in the great majority of cases the pleura, or membrane which envelopes the lungs, is also affected, and then a fixed pain, more or less severe, is experienced at a particular part of the chest, which is increased by coughing, or attempting to take in a full breath. Difficulty of breathing is a constant symptom, and is more or less urgent according to the extent or intensity of the inflammation. The respirations in a healthy person vary in number from sixteen to twenty in a minute, but in this disease they are increased to thirty, or even to forty, within the same time. When both sides of the chest are affected, and the inflammation is severe, the anxiety, oppression of the chest, and difficulty of breathing, are exceedingly distressing, and the patient feels as if he were about to be stifled; but in ordinary cases only one lung is affected, and the symptoms are then, of course, less urgent. The patient finds the difficulty of breathing increased by lying on the sound side, and therefore remains on the side affected, or on the back, with the shoulders well elevated; the latter is the attitude generally preferred under all circumstances. The expectoration is at first scanty, and composed of a little thin frothy mucus, but in the course of a day or two becomes more copious, exceedingly viscid, and assumes a yellow, reddish, or rusty colour, according to the quantity of blood with which it is mixed. The more severe the inflammation is, the more coherent and high-coloured is the expectoration, which becomes, when the disease is at its height, so remarkably tenacious, that it adheres to the sides of the vessel even when inverted and shaken in that position. The pulse, in most cases, is quick and sharp, sometimes hard; there is a peculiarly hot, dry, or parched feeling of the whole surface of the body, the urine is scanty, and very high-coloured, and with these are conjoined the other symptoms of fever, namely, thirst, loss of appetite, furred tongue, head-ache, pain in the loins and extremities, and weakness. Sometimes the brain becomes affected in the course of the disease, causing delirium; or the stomach, giving rise to nausea, and, perhaps,

vomiting; and not unfrequently the fever, instead of being inflammatory, is of the typhoid form.

The symptoms, in favourable cases, begin to decline about the fourth day; this change is indicated by the skin becoming more cool and moist, by the cough, which was previously short and dry, becoming loose and less painful, by the expectoration being more abundant, less viscid, and gradually changing from the reddish or rusty tint, to a yellowish colour: these signs of amelioration being accompanied with a corresponding diminution of the feverish symptoms. Some critical evacuation also usually takes place, such as perspiration, a copious deposit of red or white sediment in the urine, or purging; the first is generally understood to be the most common. The average duration of the disease is from eight to twelve days, but sometimes it is prolonged for a fortnight or three weeks, and followed by tedious convalescence, which is liable to be interrupted by a relapse from any slight cause.

The symptoms which mark an unfavourable termination, are a small, jerking, and rapid pulse, the expectoration being much diminished, or altogether suppressed, great frequency of respiration, and a livid appearance of the countenance. Lethargy and delirium also indicate extreme danger.

The symptoms which particularly characterise Inflammation of the Lungs, are the peculiarly pungent heat of the skin at the commencement of the disease, and, when further advanced, the orange-red or rusty colour of the expectoration, arising from the intimate admixture of blood with the secretion from the bronchial membrane; and its great tenacity, which, as we have already mentioned, does not allow it to be detached from the receiving vessel, even when we turn it upside down.

The seat of the disease is in the air cells, and the cellular membrane around them. In the first stage the lungs are merely charged with an unusual quantity of blood and frothy serum; in the second stage, lymph, or albuminous matter, is deposited in the air-cells and cellular tissue uniting them, rendering the parts of the organ affected impermeable to the air. The lung is then said to be solidified, or hepatized, because it is as solid as liver. When recovery takes place, the disease does not go beyond this stage, and the lung gradually resumes its spongy texture. In the

third stage, matter, (*pus,*) is diffused throughout the structure of the diseased part, and generally causes death.

CAUSES. Many people are repeatedly exposed to the exciting causes of Inflammation of the Lungs without being attacked by it, while others again under similar circumstances would be almost sure to suffer. Hence we infer that a predisposition is necessary for the production of the disease, but of the conditions which constitute this predisposition, we know little or nothing, and perhaps the only predisposing cause with which we are acquainted is the previous occurrence of the disease.

Cold is undoubtedly the most common exciting cause of Inflammation of the Lungs. This is clearly shown by its prevailing to a much greater extent in winter and spring, than in summer, by its frequent occurrence in cold climates, and rare appearance in inter-tropical countries. Sudden transitions from a warm to a cold temperature, or the opposite circumstances, produce common cold, (catarrh,) sore throat, or bronchitis, more frequently than this disease, which generally arises from long-continued exposure to cold; hence, masons, carpenters, watchmen, sailors, soldiers during a campaign, and all persons whose occupations are carried on out of doors, are more subject to it than those who lead a sedentary life. It has also been ascertained that women, from being less exposed to the exciting causes, do not suffer so often as men. Exposure to cold winds is a very common cause of this disorder, hence it is often met with in Provence, at Nice, Genoa, &c., during the prevalence of the piercing north-west wind called the *mistral*. It also occurs occasionally as an epidemic in every country in Europe, probably from some unknown change in the atmosphere. It is frequently complicated with measles, hooping-cough, small-pox, bronchitis, and consumption. It sometimes results from the suppression of customary evacuations, as the menses, the discharge from piles, issues, old ulcers, &c., and often occurs without any known cause.

TREATMENT. There is no disease more under management by any remedy, than Inflammation of the Lungs is by bleeding, if resorted to at the commencement of the disease, and carried to the proper extent. The efficacy of this measure has been acknowledged by medical men in all ages, and in the present state of our knowledge all other remedial means must be con-

sidered merely as auxiliaries. Some eminent physicians of the present day are averse to repeated blood-letting under any circumstance, but in this disease there can be no doubt that more harm is generally done by not bleeding the patient sufficiently, than by carrying depletion too far. No rule can be given with regard to the exact quantity of blood to be taken at one time; this must depend on the period and severity of the disease, and on the age and strength of the patient. The plan generally adopted is to allow the blood to flow from a large orifice, the patient being in a sitting position, until he feel sick at stomach, slightly giddy, and on the verge of fainting. The quantity to be withdrawn in order to produce this effect varies from eighteen to forty ounces. Immediately after the bleeding, two table-spoonfuls of the *tartar emetic mixture* (page 76, No. 55) are to be given and repeated regularly every two hours. Tartar emetic possesses a powerful influence in subduing inflammation, and ranks next to blood-letting in controlling this disease. When both these remedies are freely resorted to at the commencement of the disorder, the further development of the inflammation is often prevented, and the patient soon recovers. But, if these means produce only a temporary effect, and the hurried breathing, heat of skin, and hard or full pulse, become again urgent, venesection is to be had recourse to a second time, on the same or on the following day. In this as in all other inflammatory diseases, the blood, when allowed to rest and coagulate, presents a leather-looking surface termed the *buffy coat*, which is more or less tough and thick according to the intensity of the inflammation. Sometimes it is a quarter of an inch thick, and appears as if drawn from the sides towards the centre, giving it a cup-like form. This cupped and buffed appearance of the blood indicates a high degree of inflammatory action, and the necessity of copious and repeated blood-letting. But when the coagulated part of the blood presents only a thin buffy crust, and is at the same time loose in consistence, while its surface is flat; and if a considerable quantity of blood have been already withdrawn, it will be better to trust to the lowering action of the tartar emetic, than to carry the depletion further. The circumstances, then, which guide us in forming a judgment of the extent to which blood-letting should be carried, and in regulating its repetition, are the

appearance of the blood, and the state of the symptoms. The buffed and cupped appearance of the blood, and the continuance or recurrence of the pain, and difficulty of breathing, indicate the necessity of repeating the bleeding, at longer or shorter intervals, according to the urgency of the symptoms.

But, though bleeding, purging with calomel and jalap, and tartar emetic, when properly used within the first few hours, have frequently the effect of completely arresting the progress of the disease, yet it ought to be kept in recollection, that when the inflammation is confirmed, the disease will run its course in spite of the most active treatment; our remedies are therefore to be directed not to remove the disease at once, but to control, and conduct it to a safe termination. Hence, if we were to push the bleeding and other lowering means too far, under the idea of being able to cut short the disease, the pulse would become quick, weak, and faltering, and a state of debility would be induced which might destroy the patient; whereas, on the other hand, we must be careful to repeat the blood-letting when indicated by the circumstances above-mentioned, and to persevere steadily in administering the solution of tartar emetic, in order to prevent the inflammation extending, or terminating in suppuration or mortification.

The first or second dose of the tartar emetic mixture sometimes induces vomiting, after which it may be given regularly without the patient experiencing any further uneasiness at stomach; at other times it acts freely on the bowels during the first five or six hours. But the object in administering this remedy is not to cause vomiting or purging, but to keep up constantly the sedative and lowering action which renders it so valuable an auxiliary to bleeding. In ordinary cases the whole of the mixture directed at page 76, may be given in the course of twenty-four hours, without producing any unpleasant effect whatever, or only slight nausea.

Counter-irritation is improper while the skin continues hot and dry, and the pulse hard; but on the third or fourth day of the disease, when the inflammatory action has been considerably subdued, a large blister may be applied over the side affected, with considerable advantage.

When the tartar emetic mixture does not act upon the bowels,

they may be relieved daily by a gentle dose of *castor oil*, or the *black draught*, (page 32.)

No kind of solid food is to be allowed during the inflammatory stages of the disease; and the liquids taken should be mucilaginous or demulcent, as barley-water, linseed-tea, &c. and only a small quantity allowed at a time. A large draught of any kind of liquid has generally the effect of increasing the difficulty of breathing, and would probably cause vomiting, if given during the administration of tartar emetic. Talking and moving the body should be avoided as much as possible.

During convalescence the diet ought to be confined to light farinaceous food, and chicken broth: in returning to animal food the patient must be careful to take only a small quantity at first, gradually increasing it, until his ordinary diet can be resumed with safety. Tonic medicines are very seldom necessary, and cannot be administered under any circumstances without the greatest caution. In fact remedies of this class, and stimulating diet, are the causes which most frequently induce a relapse.

We have already mentioned that a person who has once suffered from this disease is very liable to be attacked by it again. Hence the necessity of guarding against the exciting causes by wearing warm clothing, living temperately, and avoiding all excessive bodily efforts. To counteract the tendency to a recurrence of the affection, the chest should be sponged every morning with salt and water, at first tepid, and afterwards cold, and followed by friction with a rough towel. In some cases, though every precaution is used, the disease comes on several winters in succession; we need scarcely mention that under such circumstances, removing to a warm climate is the best measure that could be adopted.

Sailors, in consequence of long watching, and exposure to cold and wet during bad weather in the spring and winter months, are frequently attacked with Inflammation of the Lungs, and the number of them who fall victims to it is perhaps greater than from any other disease; and yet there is scarcely any other more under the control of proper treatment. Even in our coasting vessels this affection often advances beyond the reach of treatment before medical assistance can be procured. It is much to be regretted that valuable seamen should thus be allowed to

perish, when drawing blood freely from the arm would in all probability be the means of saving their lives; but though no class of men are more humane, and more ready to assist each other than sailors, yet the dread of performing the simple operation of blood-letting, which is done every day by the rough hands of the village blacksmith, often prevents the master or officers of vessels from employing a measure which could not fail to be attended with great relief to the sufferer, and would frequently be the means of saving life. If the risk from opening a vein at the arm were much greater than it is, it would not be nearly equal to that which must of necessity arise from the disease, when left uncontrolled; but, in fact, the operation is so simple, that by adopting the few precautions mentioned under the head of Blood-letting, it may be performed by any one with perfect safety. We would therefore impress forcibly upon the minds of responsible persons, whether on board of ship, or under other circumstances, where medical assistance cannot be obtained, that, whenever an individual is attacked with severe pain in one or both sides of the chest, accompanied by fever, and difficult or hurried breathing, there should be no hesitation to draw blood freely from the arm, and to repeat the operation any number of times until the symptoms are relieved.

MAGNESIA.

Magnesia was formerly supposed to be a simple substance, but is now known to be the oxide of a metal called *magnesium*. This substance, from the property it possesses of neutralizing the acid which forms in the stomach, is much used to relieve heart-burn. Calcined Magnesia is in common use as a purgative, in the dose of a teaspoonful; from the mildness of its action, it is more especially useful in cases of piles, stricture of the rectum, &c.; and being also insipid, is well adapted for children. It diminishes the secretion of lithic acid by the kidneys, and is therefore a useful remedy in *red* gravel, in doses of from twenty to thirty grains twice a day.

Magnesia is the best antidote in cases of poisoning by the mineral acids.

MANNA.

Manna is the concrete juice of the *Fraxinus Ornus*, a species of ash which grows abundantly in Sicily and Calabria. It exudes spontaneously, but the best quality of Calabrian or flake Manna is obtained by making incisions in the bark of the trunk, when the weather is dry and warm. The dose is from one to two ounces, but it is not to be depended upon as a purgative for adults, hence, it is generally used in combination with the infusion of senna leaves, the bitter taste of which it tends in a great measure to conceal. From the mildness of its operation it is well suited for children, in the dose of from ten to sixty grains given in whey.

MEASLES.

Children are very subject to three eruptive disorders, viz. small-pox, scarlatina, and Measles: of these the latter is the mildest and least dangerous disease. Measles generally occurs as an epidemic malady amongst children, but it may attack only a few individuals in a locality, or may affect adults as well as those of tender years.

The symptoms which show that a child is about to be attacked by Measles are commonly significant enough. The little patient complains of general heaviness, the eyes are red and watery, and a thin fluid often runs from the nose as from persons affected with a cold in the head; the patient also sneezes frequently. More or less fever now sets in, accompanied in many cases by a very hoarse barking cough, which has often been mistaken for a symptom of croup; the stomach rejects food; the child complains of pains in the limbs or back, and, if very young, is often attacked by slight convulsions, while older children are, in many cases, delirious at night. Nothing can be more various than the intensity of these premonitory signs; sometimes the eruption makes its appearance with so little disturbance of the general health, that the patient is not even confined to bed; but in other cases the fever runs extremely high, and great alarm would be excited did we not know that it was the forerunner of an eruptive disease. Towards the end of the third, or beginning of the fourth day,

(but in some cases as late as a week) small red spots, resembling flea-bites, make their appearance about the face, and then extend over the neck, chest, belly, and limbs. The spots are at first separated from one another, but they soon join, and form clusters of a horse-shoe shape and dusky red colour.

The appearance of the eruption, however, does not, as in the case of small-pox, bring with it much alleviation of the symptoms. The fever, cough, and hoarseness continue, or are more severe, and in many instances the whole face is swollen, and the patient complains of violent headache, with difficulty of breathing.

About the third or fourth day after the appearance of the eruption, the redness on the face begins to diminish, and it subsides on other parts of the body in the same order as that in which it commenced. When the eruption has completely passed away, the scarf-skin comes off in small mealy scales, and some patients, at this time, experience a most intolerable degree of itching. Finally, about the ninth day the skin is completely free from any sign of the eruptive affection.

Such is the course of Measles in its mild or benignant degree ; but in many cases, the disease does not hold this favourable course. Two things are chiefly to be apprehended during its progress ; first, the appearance of nervous, or what were anciently called putrid symptoms ; and second, the occurrence of inflammation of the lungs, by which a very great number of children affected with Measles are cut off.

Although, generally speaking, Measles is a mild complaint, yet during certain epidemics it assumes a most dangerous character, and destroys an immense number of children. The symptoms of the malignant form are, at the commencement, great prostration of strength, anxiety, and tendency to sleep ; vomiting and looseness of the bowels ; haemorrhages from the nose, stomach, or bowels ; violent delirium and convulsive tremor of the limbs, or general convulsions. The eruption breaks out on the second day, and the fever, with all its attendant symptoms, is aggravated ; the eruption rapidly declines or assumes a livid hue, and is mixed with the blue fever-spots (*petechiae*) ; the delirium now becomes more violent ; the convulsions are frequent, and the patient commonly sinks in a state of complete insensibility. This highly dangerous and fatal form is, however, rare, and seldom occurs

except during certain epidemics. But children are peculiarly liable to inflammation of the lungs during the decline of the eruption, or within a few days after its disappearance. This occurrence is indicated by a change of colour in the face and lips, which assume a purplish hue; the skin becomes very hot and dry; the respiration is oppressed and quick, often rising to sixty or seventy in the minute; the nostrils dilate at each inspiration, and the pulse is excessively quick. The child may or may not cough, but we should never forget that young children may labour under a very severe degree of inflammation of the lungs, without either coughing or spitting up any mucus from the chest. Inflammation of the lungs thus attending Measles, often lays the foundation of consumption, by which the patients are carried off many months, or even years after the cure of the original disease.

In some cases, the eruption suddenly disappears from the face and body, and, to use a popular expression, seems to be "driven in" upon some internal part. That the eruption may vanish suddenly is very certain, but it never passes from the skin to any part of the body. The sudden subsidence of the eruption is, in itself, a matter of little consequence; it becomes, however, one of much importance, because it generally depends on, or at least is connected with an inflammatory condition of the lung, intestines, brain, or some other internal organ.

TREATMENT. In an ordinary attack of Measles, we have little more to do than keep the child in bed, administer any mild laxative medicine, so as to keep the bowels open, and give cooling drinks. The disease must run its course; and unless untoward accidents arise, the patient will, generally speaking, get well, through the aid of nature, in twelve or fifteen days.

The chief attention should be directed to the prevention or cure of any inflammatory affections which may occur during the progress of the complaint. The delirium and convulsive motions which often exist before the appearance of the eruption need not excite any alarm, unless the former be attended with other symptoms of inflammation of the brain, and the latter be very severe or general. When they do occur, they are to be treated in the manner which has already been described under the articles Brain and Convulsions. The earliest symptoms of inflammation of the lungs must be combated by local or general

bleeding, according to the age and strength of the patient (see *Lungs, Inflammation of*); but we should remember that children, while labouring under eruptive diseases, will not bear blood-letting so well as under other circumstances. Blisters to the chest, mustard poultices to the feet, and the tartar emetic mixture, will be of great utility when bleeding or the abstraction of blood by leeches has been previously had recourse to.

Towards the decline of the complaint, some children suffer much from diarrhoea, or looseness of the bowels. We should not check this salutary discharge, unless it reduce the strength of the little patient, or continue for more than three or four days. We may then employ a starch clyster, containing six to ten drops of *laudanum*, or give occasionally two ounces of the *chalk mixture*, with twenty to thirty drops of the tincture of *Catechu* (see *Diarrhoea*.)

When the eruption suddenly disappears, we must not conclude that this is necessarily a sign of weakness, and commence at once with wine or other stimulating fluids. On the contrary, it will be more prudent to endeavour to ascertain whether this may not depend, as has already been mentioned, upon some internal inflammation; but if the disappearance seem to be connected with a general state of weakness, or to have occurred without any apparent cause, then we may give small quantities of wine and water, but with very great caution, or administer the *carbonate of ammonia* in the following manner:—

No. 244.

Sub-carbonate of ammonia, six grains.

Camphor, three grains.

White sugar, three scruples.

Divide into three powders; one to be taken every second hour.

The child should also be placed in a warm bath, but not kept there more than six minutes, for fear of exhausting the strength; and we may endeavour to bring back the eruption on those parts of the body from which it has disappeared, by blisters or mustard poultices applied for a short time.

The malignant form of Measles is unfortunately but little under the control of medicine. Active purgatives must in no case be administered; a few grains of *calomel* (two or three),

however, may be given during the day, with a mixture composed as follows:—

No. 245.

Sub-carbonate of ammonia, twelve grains.

Aromatic confection, half a drachm.

Camphor mixture, six ounces. An ounce every three hours.

Or when the nervous symptoms are very severe, we may let the child have small quantities of wine and water every two or three hours, with a draught composed of

No. 246.

Infusion of cusparia, two ounces.

Compound spirit of ammonia, ten drops.

It must be confessed, however, that all our efforts will too often fail in arresting the progress of this form of the disease; happily, it is now of rare occurrence.

During the stage of convalescence from Measles, attention should be paid to the child's diet, and particular care must be taken to prevent exposure to damp, cold air, &c.; for, as we have already noticed, Measles leave behind them a great tendency to the development of scrofulous disease in the chest, or, in other words, to pulmonary consumption.

MENSTRUATION.

The periodical discharge of females termed Menstruation, indicates the power of procreation, and when regular, and in due quantity, serves not only as a sign of health, but as a powerful means of preserving it. This discharge appears intended to relieve the system of the blood which is destined for the support of the foetus during pregnancy, as well as for the secretion of milk, the natural aliment of the child during the first months of its existence; and has also the effect of stimulating the womb, and fitting it for conception. If, therefore, the super-abundant blood which is intended by nature to be discharged through the medium of the womb, be retained in the system, it must accumulate in other important organs, or tend to deprave the whole mass of blood in circulation, and thus induce local disease, or

general derangement of the health ; and if, on the other hand, the discharge be much greater, or occur more frequently than natural, the body will be weakened, and the health otherwise injured. Hence, from the great influence which Menstruation must necessarily exercise over the whole system, it is obvious that perfect health cannot be maintained, while there is any irregularity, or disorder, of this important function.

Menstruation begins in warm climates about the age of ten or eleven ; but in northern countries, as among the Laplanders and Esquimaux, not till the eighteenth or twentieth year. In this country, girls begin to menstruate between the fourteenth and eighteenth year of their age, rarely later, but frequently at a more early period. In those who reside in the country, take regular exercise, and enjoy good health, Menstruation commences late, whereas, under opposite circumstances, it appears several years earlier. A delicate and luxurious manner of living, early excitement of the imagination, want of suitable exercise in the open air, sleeping upon down beds, late rising, and in a word, mismanagement or neglect of the moral or physical education of girls, tends strongly to induce precocious Menstruation. The non-appearance of the discharge before the age of seventeen or even later, is more desirable than its premature occurrence ; the latter, however, is not to be considered as a disease in itself, although it generally indicates a feeble constitution, which is often associated with precocious mental as well as bodily development, and acute nervous sensibility, constituting that state of the female system, which predisposes to hysterics, and other nervous disorders, and to subsequent derangements of the uterine functions.

Young women are often late in menstruating, and this sometimes becomes a source of much anxiety to parents, who request medical aid to bring on the discharge, but although it be delayed considerably beyond the fourteenth year, the age at which it generally appears, there is no occasion for alarm as long as the usual signs of puberty are absent. In this case we are not authorized to adopt means for the purpose of hastening Menstruation, nor should we be justified in attempting to remove the various ailments to which girls are subject at this period of life, by

administering remedies to bring on the menstrual flux. But on the other hand, when, at the usual age of puberty, pain is experienced from time to time at the loins, and in the abdomen, with an unusual development, or painful sensation of tension, of the breasts, a periodical swelling at the lower part of the belly, and other symptoms indicating that the system is making fruitless attempts to establish Menstruation, it then becomes necessary to adopt means to aid the efforts of nature, in order to prevent the serious consequences which might result from retention of this salutary evacuation. But we are not to interfere more than is really necessary, because we know that nature, when aided by suitable regimen and diet, seldom fails in effecting this important change. When medical aid is really required, the remedies to be employed must depend greatly upon circumstances. If the girl be full blooded, and of a robust constitution, and if at the period when the symptoms above enumerated are experienced, she complain of headache, while at the same time the pulse is full, the face flushed, and other symptoms are present, indicating an excess of action, it will be advisable to take a few ounces of blood from the arm, or from one of the veins at the ankle, or by the application of six or eight *leeches* to the groin or round the genitals. The bowels should be mildly acted on by cooling purgatives, as *Seidlitz powders*, *Epsom salts*, &c. every second or third day; and the diet must be mild and carefully regulated, animal food being sparingly used, and stimulants of every description entirely abstained from.

An opposite state of the system, approaching to chlorosis, occurs much more frequently, especially in large towns, than the plethoric state above described; in this case the patient becomes pale, languid, emaciated, loses strength, and is easily fatigued, the pulse is feeble, the bowels are constipated, and she complains of being unable to keep her feet warm. The treatment indicated in the last case was to lower the plethoric patient to a state favourable to Menstruation; here, on the contrary, we must endeavour to raise the patient to the same state by tonic and strengthening remedies. Of this class of medicines, preparations of iron hold the first rank in all menstrual disorders: from ten to fifteen drops of the *tincture of steel* in a little water, or from ten

to twenty grains of the *subcarbonate*, or *prepared rust of iron*, mixed with jelly, should be taken regularly three times a day, and the bowels are to be kept open by the following pills :—

No. 247.

Aloes, two scruples.
Rhubarb, half a drachm,
Myrrh, half a drachm,
Extract of chamomile, a drachm,
Syrup, a sufficient quantity. Mix, and form into forty pills, two or three or more to be taken, when necessary, at bed-time.

At the monthly periods, which are announced by the symptoms above mentioned, two, three, or four *leeches*, may be applied daily, for three or four days, as above directed, or to the inside of the thighs. The abstraction of small quantities of blood in this manner, has a powerful effect in exciting the action of the womb, and for this purpose the hip-bath should also be frequently used ; the water at first ought to be about the temperature of a hundred degrees of Fahrenheit's thermometer, and afterwards gradually increased until it be as hot as the patient can bear.

The strength must be supported by generous diet and port-wine ; frequent friction of the lower extremities with the flesh brush or horse-hair glove is serviceable ; and instead of depressing the girl's spirits by confining her to the house, and treating her as if she were labouring under a serious illness, she ought to be allowed to enjoy the benefit of change of air to the sea-coast, plenty of exercise in the open air, particularly on horseback, dancing, the society of agreeable companions, and every care should be bestowed to render her cheerful and happy,—these constitute the natural and most effectual means of giving vigour to the system, and bringing on healthy Menstruation.

In general the duration and quantity of the first discharges are not to the same extent as when Menstruation is fully established ; and it often happens that two or three months elapse between the first and second discharge, and sometimes the menses do not appear at regular periods, until the expiration of a year or two.

It is of the greatest importance that young women should be instructed *early* by their female friends in the management of themselves during Menstruation ; and every sensible mother

knows well, that exposure to cold, dancing, and all kinds of active exercise, food difficult of digestion, bathing, medicines, particularly emetics and purgatives, mental excitement, and other causes which might check the discharge, ought to be carefully avoided at this period.

CHLOROSIS. A characteristic symptom of chlorosis is a pale yellowish green complexion, hence it is commonly called *greensickness*. This singular disorder is very frequently met with at the age of puberty, before Menstruation has commenced, or in young girls in whom the discharge has ceased to flow, and sometimes it occurs in married females.

Chlorosis is always a chronic disorder, and commences slowly. The patient is at first languid and listless, disinclined to amuse herself as usual, and is easily fatigued by ordinary mental or bodily occupation; her face gradually becomes pale, and the skin assumes a sallow appearance, the bowels are constipated, she loses her appetite, and has sometimes an unnatural craving for certain articles of food, the tongue is white, the breath fetid, and if Menstruation has been already established, the discharge loses its red colour, and diminishes in quantity, until it no longer appears.

In the confirmed stage of the disease there is often considerable emaciation, the flesh loses its firmness, the lips, tongue, gums, and inside of the mouth, are unnaturally pale or whitish, slight swelling in the eyelids and face is observed in the morning, this wears off during the day, and at night the feet, or ankles, are swollen above the edges of the shoes; the urine is pale and limpid, the belly is frequently enlarged from flatulency, particularly after eating; there is sometimes nausea, or vomiting in the morning, heartburn, and other symptoms of indigestion. The appetite is, in many cases, morbidly capricious: sometimes there is a desire to eat pickles, chalk, lime, pipe-clay, cinders, &c., and so strong is this extraordinary craving, that some girls persist in swallowing these substances in spite of the frequent admonitions of their friends. The shortness of breathing, which in the first stage was only slight, is now exceedingly oppressive, and accompanied with palpitation of the heart on ascending the stairs, attempting to walk quickly, &c. The pulse is feeble and small, there is great difficulty in keeping the feet warm; sometimes

there is cough, periodical head-ache, and a variety of nervous or hysterical symptoms.

CAUSES. Females of the lymphatic temperament, and of weak constitution, are most frequently attacked with chlorosis. It is developed under various debilitating causes, as frequent exposure to a cold moist atmosphere, watery or poor diet, more especially when conjoined with fatigue and long watching, the various depressing passions, as grief, unrequited love, &c. Breathing impure air, and want of exercise, are the chief predisposing causes of chlorosis in Great Britain; hence it prevails to a very great extent in Manchester, Nottingham, and other large manufacturing towns, among the females employed in factories, and in various sedentary occupations, and is frequently associated with disorders of the digestive organs. Indolence, and luxurious habits in the higher classes of society, are fruitful sources of this affection in all countries.

This disease seldom proves fatal, but, when left to itself, or badly treated, it may be prolonged during many months, or even years, and may leave traces of its injurious effects on the constitution in after life.

TREATMENT. The blood of chlorotic patients is always in a depraved state; the fibrine, or coagulable part, and the red particles, are deficient, while the serous, or watery part, predominates. The principal indication, therefore, is to restore the blood to a healthy state, and the most powerful remedies for this purpose are preparations of iron. The sub-carbonate, or prepared rust of iron, as already directed, may be given, the dose being gradually increased to the extent of a drachm a day, or the effervescent draughts containing the sulphate of iron. (See page 404.) The bowels are to be kept open by the pills, No. 244, and 441, and the diet and regimen directed in retention of the menses, are also applicable to chlorosis.* In many cases the good effects of

* Dr. Blundell gives the following instructions with regard to diet: "Allow the patient four meals a day; breakfast at eight or nine o'clock, dinner at one or two, tea at five, and supper at nine or ten. Half an hour before breakfast the patient must take a table-spoonful of unbruised mustard seed. For breakfast, black tea and milk, in equal parts, with stale bread and fresh butter, or dry toast, with a thin slice of fat bacon, toasted before the fire, not fried, or a new-laid egg may be taken instead. Two hours before dinner all the drink wanted must be taken; ginger-beer, table-beer, or toast and water, are to be

this treatment are observed in the course of a few days, and the patient recovers entirely in five or six weeks; but it is frequently necessary to continue the iron during a longer period.

When our remedies begin to have the desired effect, the following symptoms indicate the improvement: the dull, languid expression of the eyes disappears, while the dark-coloured circle beneath them becomes gradually less apparent, the complexion improves, and the skin becomes less sallow; the strength increases, the appetite returns, the head-ache, restlessness during the night, the palpitation of the heart, the occasional sickness at stomach, heartburn, and other nervous symptoms wear off, the shortness of breathing and tightness across the chest are less troublesome, the pulse is stronger and less frequent, the puffed appearance of the face in the morning, and swelling of the ankles at night, are no longer observed, and the disposition is more cheerful. The treatment however, is not to be discontinued because these favourable symptoms are manifested; the iron must be regularly administered, the dose being gradually diminished until Menstruation is established, or re-appears in those who have already menstruated, and the general health is entirely restored.

SUPPRESSION OF THE MENSES. The menstrual discharge may be checked suddenly from accidental causes during its flow, or it may fail to appear at the usual time: the latter may be the natural effect of pregnancy, or may occur under various circumstances which produce disease, as living on gross diet, and not taking sufficient exercise, and the various indulgences, luxuries, or refined habits of modern life, which tend to increase the

preferred. Half an hour before dinner the mustard-seed must be repeated, to increase the flow of the gastric secretion. At dinner the boiled meats are to be preferred to roast, the white meats, including fish, to be preferred to the red; the food taken must be well done, and the inside will be found better than the outside; potatoes are to be preferred to every other vegetable. The food should be well masticated, and eaten slowly. Good Cayenne pepper must be taken with the dinner, so as to warm the stomach. Not a drop of any kind of drink should be taken. If pastry be eaten, it should be boiled. After dinner, oranges or figs may be allowed. The tea to be similar to the breakfast. The supper must be in the form of a light dinner, or what is better, a slice of bread and butter. On going to bed, a table-spoonful of spirit may be taken, with some spice, mixed with three or four table-spoonfuls of hot water. I prefer the Geneva, as it contains the juniper."

quantity of blood beyond the wants of the system. For example, when women, whether from over-feeding and indolent habits, from hereditary tendency, or from both causes combined, become fat and unwieldy, Menstruation gradually diminishes as they increase in bulk, and few females who labour under extreme obesity menstruate at all. This disorder may also be caused by an opposite state of the system, induced by loss of blood, poor diet, long-continued fatigue or exposure to cold, frequent abortion, leucorrhœa, or *whites*, and other causes which depress the vital powers; hence it is obvious that the treatment must depend on the causes, symptoms, and circumstances, connected with each case.

Females in the full enjoyment of health may have the discharge arrested suddenly, from exposure to cold, sudden fright, or any strong mental emotion, but the former cause is by far the most frequent. In this case there are head-ache, pain in the limbs, back, and loins, full frequent pulse, and other symptoms of fever. If the patient be of a full plethoric habit of body, blood should be drawn from the arm. The French physicians prefer opening a vein at the ankle, but the local abstraction of blood by the application of six, eight, or more *leeches* round the genital organs, and to the inside of the thighs, is preferable in ordinary cases. The slipper bath is to be used as early as possible, or the patient may sit with the lower part of her body immersed in a tub of water, at the temperature of one hundred degrees, during twenty minutes or half an hour, and after being carefully wiped dry, she is to be well wrapped up and placed in a warm bed. Two or three of the *pills of rhubarb and aloes*, No. 247, are to be taken every three or four hours, until the bowels are freely opened; and, to promote perspiration, four grains of *James's powder*, with eight or ten of *Dover's powder*, are to be given every six hours, until three or more doses are taken. This treatment conjoined with light nourishing diet, or abstinence, if the feverish symptoms run high, seldom fails to bring back the discharge. But if the patient be neglected, or if the treatment adopted fail to produce the desired effect, the menses may not appear at the next expected period, and the suppression becomes chronic. In many cases, again, the obstruction is the result of general bad health, and comes on slowly; the discharge either gradually

diminishing in quantity, or appearing at unusually protracted intervals, until at length it ceases entirely. The health for the first month or two may not suffer materially, but the important function of Menstruation cannot be long suspended without producing a series of morbid symptoms, depending on the circumstances of the case. The balance of the circulation may be deranged, and determination of blood to different organs may take place, and give rise to haemorrhage, (discharge of blood,) from the lungs, stomach, bowels, or nose. The latter occurs most frequently, and is a salutary effort of nature to relieve the head-ache, giddiness on stooping, occasional dimness of sight, and other symptoms indicating congestion or fulness of blood in the head. The digestive organs frequently suffer, the tongue becomes foul, the appetite impaired, and the bowels constipated, or otherwise disordered. The lower part of the abdomen is at times swollen and painful, and the breasts are sometimes tense and tender, or painful when pressed upon. Many women are troubled with various nervous diseases, as hysterics, spasms, &c., while the menses are obstructed, and recover entirely when the healthy function of the womb is restored.

In the treatment of chronic suppression of the menses, we must, in the first instance, endeavour to restore the general health. If there be a greater inclination to sleep than is compatible with health, lassitude, occasional giddiness, and a sensation of fulness or weight in the head, full pulse, an overcharged state of the veins, a more or less turgid appearance of the countenance, suffusion of the eyes, slight palpitation of the heart, and other symptoms indicating plethora, or repletion of the blood vessels, the patient should be bled from the arm; and if there be determination, or too great a flow of blood to the lungs, head, or any other organ, local bleeding, by the application of leeches or cupping, as often as may be necessary, is indicated. The bowels are to be kept freely open by *Epsom salts*, *Seidlitz powders*, or any other cooling purgative salt, and spare diet, abstinence from wine or malt liquor, early rising, and regular exercise in the open air, must be strictly enjoined. When by these, or other means suited to the circumstances of the case, the system is sufficiently lowered, and the general health improved, the menstrual flux will probably return without the assistance of remedies which are

understood to exercise a specific influence on the womb ; but if the discharge fail to appear, we must then have recourse to the *preparations of iron*, as directed at pages 403 and 446, and at the period when the patient feels as if she were about to be unwell, five or six *leeches* should be applied to the upper part of the inside of the thighs, and round the genital organs, every night, for three or four nights in succession ; the hip-bath, as directed at page 446, and the application of *chamomile flowers*, steeped in hot water and wrapped in flannel, to the lower part of the belly, are also to be repeatedly employed. An injection, composed of fifteen or twenty drops of the *solution of ammonia*, (*liquor ammoniae*,) to an ounce and a half of warm milk, thrown up the vagina three or four times a day, by means of a syringe, furnished with a long flexible tube, is much employed in this country as a local stimulant, and is sometimes very efficacious and prompt in its action ; care, however, must be taken not to make the injection too weak, nor so strong as to produce pain : it should be prepared of sufficient strength to cause a feeling of heat, and a slight sensation of throbbing of the part. The repeated application of mustard cataplasms to the breasts, has been known to bring back the menses after they had been a long time suppressed. But it must be kept in mind that these remedies are only to be used at the periods when the menses ought to appear, or when they seem disposed to flow, and if there be no symptoms to indicate these periods, they should be employed during three or four days every month, for four or five months in succession, or longer if necessary, the regimen and diet as above directed being strictly followed during the intervals.

When suppression of the menses has arisen from depressing causes, and is accompanied with symptoms of debility, tending to chlorosis, generous diet, with wine or porter, pure air, exercise, and the treatment recommended in the latter disorder should be had recourse to.

Dr. Brera, of Padua, considers *iodine* as possessed of almost a specific power in overcoming obstruction of the menses ; and we have seen this remedy used in the Italian hospitals with great success. The *ergot of rye* is now extensively employed in suppressed, as well as in excessive Menstruation, and in fact many pages might be filled in noticing the various remedies which have

been given in this disorder ; but the treatment we have directed is recommended by the best authors, has the advantage of being perfectly safe, and easily managed, and is in general successful.

In concluding this part of the subject it may be well to mention, that no one is justified in administering remedies with the intention of bringing back the menses, without being satisfied that the suppression is not the result of pregnancy ; to neglect this precaution, or to mistake the natural for a morbid suspension of the discharge, might lead to the most serious consequences. It should also be borne in mind, that suppression of the menses is more frequently the effect of other diseases, than a disease of itself ; when merely symptomatic, the principal indication is of course to remove the disorder on which it depends ; but at the same time we should not neglect to use the necessary means to restore the healthy function of the womb, because the absence of the menstrual discharge always increases any disorder with which it may be complicated. In all cases of this description, however, it would be improper to use medicines internally, with the intention of stimulating the womb, inasmuch as this effect cannot be produced without at the same time exciting the diseased organ on which the suppression depends ; and we must therefore trust to diet, leeching, the warm hip-bath, and other local means above prescribed, conjoined with treatment suited to the principal disease.

PAINFUL MENSTRUATION. This is a very common disorder, and is a source of great suffering to many women. Two or three days before the discharge appears, the patient complains of pain in the back, loins, and lower part of the belly, irritation of stomach, constipation of the bowels, general uneasiness, and irritability of temper : the latter symptom, however, is not constant—some women bear the repeated and often protracted suffering of this painful affection with great patience and fortitude. The discharge comes away at first in drops, accompanied with increased suffering ; the pain extends from the loins and lower part of the abdomen to the hips and thighs, the belly may be swollen from flatulency, sometimes there is considerable pain and difficulty in voiding urine, or it is altogether suppressed during the first day, or at the time the symptoms are most urgent. The pain is not constant, is much more severe at one time than another, and

generally ceases with the discharge, which is nearly always scanty, although it may continue to flow three or four days, or even longer. At the commencement of the disorder, the patient may experience pain only during the first day of the discharge, but the suffering gradually becomes more severe, and of longer duration, until at last, from eight to fifteen days of every month are passed in this manner; the general health, spirits, and vigour decline, and after many years of unceasing bodily or mental distress, at one period suffering acute pain, at another dreading its approach, the constant irritation of the system which has been unavoidably kept up, frequently induces consumption, organic disease of the womb, or some other fatal disorder, and the patient is carried off. Sometimes there are slight feverish symptoms, but Dr. Blundell and the best authors are of opinion, that this is a spasmodic or nervous, and not an inflammatory disease.

In some cases, Dr. Blundell states, you meet with a second variety of this disease: month after month, at the time the catamenia (menses) should flow, you have a membrane discharged from the womb, of various forms; it is rough and shaggy on its inner surface, smooth and polished on the external; it is of the shape of the womb, and is expelled with pains more or less severe, and sometimes floodings. This disease bears great resemblance to miscarriage—the principal characters are the same; the pains, the eruptions of blood, the escape of the membrane, are enough, in a country town, to set every tongue in motion. This disease, he also observes, may occur in virgins.

Besides the train of distressing symptoms which painful menstruation gives rise to, it almost invariably renders the woman sterile. A celebrated accoucheur, the father of Lord Denman, was of opinion that every woman labouring under this disorder is incapable of conceiving or of bearing children. Chlorosis and suppression of the menses, when unconnected with other disorders, are rarely dangerous, and in general easily cured; but this is an obstinate disease, and often defies all our remedies.

CAUSES. Very little is known with regard to the causes of painful Menstruation; there can be no doubt, however, that it occurs most frequently in the obscure, ill-ventilated, and badly lighted alleys, courts, and lanes of large towns, where the air is charged with noxious effluvia. Girls from the country, employed

in sedentary occupations, in the metropolis, are very subject to this, as well as other menstrual disorders.

TREATMENT. If there be pain, or tenderness, on pressing with the hand over the lower part of the belly, ten or twelve leeches may be applied over the womb; but, as this affection seldom occurs in robust or plethoric women, bleeding cannot be carried far, or frequently repeated, without proving injurious. The warm hip-bath, as directed at page 446, should be employed three or four times daily; this has considerable effect in increasing the discharge, and mitigating the pain; and the bowels are to be kept open by mild laxatives. Five grains of the extract, or a drachm of the *tincture of henbane*, may be taken every six hours, or oftener, according to the effect produced. (See page 349.) This remedy, in some cases, has an excellent effect in soothing the pain, but in general it is found necessary to administer *opium* in the dose of one or two grains, every four or five hours, or at longer intervals, according to the circumstances of each particular case, or three grains may be passed up the rectum. (See *Suppository*.) When symptoms of hysteria are present, *assafetida* should be combined with the opium, and if the belly be much distended, an enema of a solution of the former remedy, seldom fails in removing the flatulence. (See page 37.) Frequent injections (per anum) of warm water, or linseed tea, and fomenting the belly with a decoction of poppy-heads, ought not to be neglected. *Mindererus's spirit* (*solution of acetate of ammonia* of the shops,) is supposed to exercise a sedative action on the womb, and is strongly recommended in this disorder by two celebrated French medical men, Magendie, and Cloquet. We have used this remedy in some cases with considerable advantage, in others without the slightest good effect. It appears to us to be more especially serviceable where there is tenderness or pain, on pressure on the abdomen, accompanied with some degree of febrile excitement, and also in cases where the womb is found exquisitely tender on internal examination. (See *Womb*.)

The sub-carbonate, or some other preparation of iron, should be given during the intervals. If the patient be of scrofulous habit of body, the *iodide of iron* is to be preferred; the dose of this at first should not exceed two grains, twice a day, but may be gradually increased according to its effects; if it produce slight

nausea, giddiness, and head-ache, the dose should be diminished, or the medicine altogether discontinued for a time.

IMMODERATE FLOW OF THE MENSES. Healthy women menstruate every twenty-eight days; the discharge continues from three to four days, and in this country, the quantity lost is about five or six ounces. This, however, is only a general rule, liable to many exceptions; in some women the discharge is naturally scanty, in others profuse; so that we are not to judge by the quantity of fluid lost, but by the effects produced. The symptoms induced by excessive Menstruation are, a feeble or intermittent pulse, cold extremities, weak respiration, general weakness of the system, loss of appetite, depression of spirits, &c. Some or all of these symptoms, in a more or less urgent degree, may arise from the too frequent recurrence of the discharge, from its continuing too long (eight days or more,) at each monthly period, or from an immoderate flow within the usual time. The healthy menstrual fluid is a peculiar secretion from the womb, and not pure blood; but in this disease, the discharge is not only in excess, but is also nearly always mixed with clots of blood.

Immoderate Menstruation occurs in opposite states of the system; it may take place in connexion with a plethoric or robust habit of body, or with a relaxed soft state of the solids, thin watery blood, and feeble constitution. The former species of the disorder is announced by the following symptoms—a day or two before the expected period, there is a sensation of itching and heat in the vagina, pain and feeling of weight at the loins and lower part of the belly; sometimes the breasts become hot, slightly swollen, and painful. These are usually accompanied by symptoms of general excitement, the pulse is full and increased in quickness, the skin is hot, there is considerable thirst, headache, and giddiness. At last the discharge appears, mingled with blood, and flows profusely, all the symptoms are relieved in the course of a few hours, and the rest of the period is passed without inconvenience, or the discharge continues in increased quantity for several days, and the patient is left languid and weak. The discharge may declare itself in this manner at several consecutive monthly periods, without the general health suffering materially; but if the disorder continue long, the constitution must inevitably suffer from the loss of blood.

The second form of the disorder is of more frequent occurrence,

and may result from the one just described, or commence in women of delicate, weak, and relaxed frames: in either case, the menstrual flux begins without being preceded by any marked premonitory symptoms as in the last variety, continues much longer, and recurs more frequently than natural. When the complaint has existed long, the discharge is readily renewed by any slight mental excitement or bodily exertion, and in many cases almost a constant drain is thus kept up from the womb. The patient's strength is not only exhausted by the repeated loss of blood, but also by leucorrhæal discharge (*whites*) during the intervals.

Immoderate flowing of the menses cannot last long without the patient experiencing a variety of symptoms, arising from deficiency of blood in the system. She gradually loses strength, and becomes exceedingly languid; the breathing is hurried on any ordinary exertion, the face is pale and contracted, or may appear bloated and fuller than natural, and there is a livid circle round the eyes; the appetite is greatly impaired, the bowels are constipated, and at night the feet and ankles are swollen. Symptoms indicating a deficiency of blood in the brain, are often superadded to these; head-ache, giddiness, and ringing in the ears are complained of, there is considerable nervous irritability, the patient being disturbed by the slightest noise; the pulse is quick, weak, and easily excited, and palpitation or fluttering at the heart is brought on by slight exertion.

CAUSES. The chief predisposing causes of the first variety are over-feeding, eating rich and highly-seasoned dishes, drinking wine, porter, &c., want of sufficient exercise, late hours, hot rooms, and the various causes which tend to increase a plethoric state of the system.

The predisposing causes of the second variety are insufficient or poor watery diet, frequent abortions, whites, sedentary habits, want of pure air, mental anxiety, and all circumstances which depress the vital powers. The occasional exciting causes are long-continued dancing, exposure to cold, excessive venereal indulgence, constipation of the bowels, &c. Married women from thirty to forty-five years of age are most subject to this complaint—it seldom occurs in young unmarried women.

TREATMENT. When profuse Menstruation takes place in full plethoric constitutions, the first object in regard to the treatment

is to reduce the fulness of habit, and counteract the determination of blood to the womb. Where we see all the signs of the system being overcharged with blood, when the pulse is full and strong, the skin hot and dry, with considerable thirst, and other symptoms of general excitement, accompanied with pain at the loins, and a feeling of fulness and throbbing, with a sensation of heat and weight at the lower part of the abdomen, the first step to be taken is to draw blood from the arm, to the extent of ten or twelve ounces, or from twelve to fifteen *leeches* may be applied to the lower part of the belly, and round the parts of generation. In ordinary cases the system can be sufficiently reduced, without these depleting measures, by a rigidly abstemious diet, keeping the bowels open by repeated small doses of *Rochelle* or *Epsom salts*, and the daily use of *nitre*, to the extent of forty or fifty grains, in barley-water, or any other mild beverage, together with suitable exercise, and avoiding the predisposing causes above mentioned. Dr. Blundell says, "stimulants must be avoided, more particularly port wine, which women are very apt to resort to, either on account of its flavour, or with the hope of deriving benefit from its astringent qualities."

A very different mode of treatment should be adopted when there is no feverish excitement, and the woman is pale and weak; in this species of the disorder we must endeavour to increase the strength and improve the general health; remedies being at the same time employed to strengthen the womb itself, by giving tone to its secreting vessels.

During the intervals of the discharge, the diet should be nourishing, and easy of digestion, but not stimulating; soup, gruel, and all kinds of watery diet, being carefully abstained from. A moderate quantity of port wine, claret, or porter, may be allowed. The body ought to be well covered with flannel, and peculiar care taken to keep the feet warm; exercise in the open air, without fatiguing the patient, is not to be neglected; and rubbing the limbs with the flesh-brush, or horse-hair glove, will be found very serviceable, and is the best substitute for bodily exercise. The employment of the cold hip-bath, with common salt dissolved in it, is very desirable in all cases; and the shower-bath, at first a little tepid, and afterwards cold as the patient can bear, will be found advantageous when its use is not contra-indicated by an extreme state of debility. The best tonics

are the *sulphate of zinc* and *quinine*: either of these remedies may be given in the dose of one or two grains, in the form of pills, three times a day.

We shall now proceed to point out the measures to be adopted to moderate the violence of the discharge. The most powerful external means we possess for this purpose is the application of cold. As long as the discharge continues, the patient must remain perfectly quiet in bed, in a cool well-aired room; she should lie on a mattress in preference to a feather-bed, and her head and shoulders should be low. Cloths, sprinkled with, or dipped in cold vinegar and water, are to be applied over the abdomen and genitals, and round the loins and hips. The utmost attention must be paid to change the cloths frequently, because, if allowed to remain long, instead of being of service, they would then act as a warm fomentation, and tend to increase the discharge. If the application of cold in this manner do not produce the desired effect, and if the loss of blood be so great as to place the woman's life in jeopardy, we must then have recourse to plugging the vagina by introducing a sponge, or a silk or cambric handkerchief. The plug should be left in the vagina for several hours, if the patient can bear it, so as to allow clots to form and close up the mouths of the bleeding vessels. If the discharged blood be pent up in the vagina longer than twenty-four hours, it becomes offensive, and acts as a source of irritation; the plug therefore should not be allowed under any circumstances to remain beyond that period, and when removed, great care should be taken to withdraw it gently, in order to prevent a renewal of the discharge. A bit of ice, wrapped in cambric, and passed up the vagina, has often an excellent effect. Cold water thrown into the bowels (rectum) with a syringe three or four times a day, is also serviceable.

The most powerful internal remedies for checking the discharge are the acetate or sugar of lead, and opium.

No. 248.

Acetate, or sugar of lead, six grains,
Vinegar, two drachms,
Laudanum, one drachm,
Water, six ounces. Mix. Three tablespoonfuls to be taken every three or four hours, till the discharge is restrained. Or,

No. 249.

Acetate of lead, six grains,
Extract of gentian, twelve grains,
Extract of opium, two grains. Mix, and form into six pills; one to be taken every three or four hours.

Dr. Blundell advises the acetate of lead to be discontinued, whether the discharge be diminished or not, after half a drachm or two scruples have been taken.

When the loss of blood has brought on extreme weakness, restlessness, and irritability, forty drops of *laudanum*, or two grains of *opium*, often quiet the patient, and produce refreshing sleep; the dose may be repeated in the course of a few hours, if necessary. Small quantities of nourishment, as beef-tea, eggs beat up with tea, &c. must be given from time to time, in order to support the patient's strength. (See *Flooding*, page 298.)

In all long-continued cases the necessary steps must be taken to ascertain whether the disorder depend on ulceration, polypous tumours, or any organic disease of the womb.

CESSATION OF THE MONTHLY DISCHARGE. It is generally understood in all countries that the sooner Menstruation commences the sooner it ends, and *vice versa*. In this country and in the more temperate regions, the final cessation of this important function usually takes place about the age of five and forty. This period, which announces that the faculty of conception has ceased, is commonly called the *turn of life*, and is generally considered by women as the most critical time of their whole life. But there does not appear to be any good ground for the dread which women generally have in looking forward to the final cessation of the menses, inasmuch as statistical inquiries, carefully conducted, on a large scale, in London, Paris, Berlin, &c. do not show a greater mortality in women than in men, between the age of forty-two and forty-six, nor does the mortality appear to be greater at this period than the progress of age would have necessarily induced.

The cessation of the menses is a natural process, and the majority of women suffer little or no inconvenience from the change which occurs in the constitution at this period; nevertheless it cannot be denied that chronic disorders are aggravated or developed, and it has frequently been remarked that cancer

declares itself where no suspicion has existed of any predisposition to that disease in the system ; it also happens occasionally that a small hard swelling in the breast, or at the neck of the womb, which may have given little or no pain for years, is at this particular time lighted up, and soon converted, if not removed by the knife, into a frightful cancer. But on the other hand, this important change in the female system is often highly conducive to health ; for example many women whose general health has been impaired from long-continued painful Menstruation, or from nervous disorders, are relieved from their ailments, and recover completely, after the final cessation of the menstrual flux.

The cessation of the menses is generally accomplished gradually ; sometimes the discharge fails to appear at one or two successive periods, then re-appears, and may go on in this manner with longer or shorter intervals intervening, the quantity of the discharge gradually diminishing, until it is entirely suppressed. This gradual mode of termination is always desirable, but sometimes the discharge ceases suddenly ; this occurrence may in most cases be traced to some accidental cause, as exposure to cold, fright, or some sudden mental emotion, &c. and is then usually attended with more or less derangement of the system. In some women Menstruation terminates by repeated discharges of blood from the womb ; in others again, it appears at irregular periods, during five or six years, or even longer, and finally ceases without the system suffering any inconvenience.

The cessation of the menses being a natural process, and not a disease in itself, we may safely leave nature to accomplish this salutary change in the system, and should carefully avoid interfering, unless symptoms occur to authorise the employment of remedial measures.* The treatment in ordinary cases consists in attention to diet, which should be light, nourishing, and easy

* The late Dr. Mackintosh, of Edinburgh, points out in forcible language the folly of resorting to quack medicines, at this period. He says, Women usually become apprehensive of themselves, and despond ; and, whether they suffer or not, many have recourse to quack medicines, which are constantly advertised, and which they take, to endeavour either to prolong the discharge, or to ward off disease. It cannot be too generally made known that many females suffer from this imprudent conduct, and create diseases, which in all probability never would have assailed them, had they taken proper medical

of digestion; in regular exercise in the open air, care being taken to avoid exposure to cold or damp; in wearing warm clothing, and paying great attention to keep the feet warm; in the occasional administration of *castor oil*, or any other mild medicine, if the state of the bowels require the aid of laxatives; and in keeping the mind tranquil. If the woman be robust, and of a plethoric habit of body, if the pulse be full and hard, and other symptoms present indicating that the system is loaded with blood, bleeding to the extent of twelve or fifteen ounces, repeated as often as may be found necessary, will be required, together with spare diet, saline purgatives, and nitre with barley-water. If there be determination of blood to the head, indicated by giddiness, flushing of the face, throbbing of the carotid and temporal arteries, cupping at the back of the neck should be had recourse to; and, if the local bleeding should not entirely remove the head symptoms, it will be advisable to place a seton in the nape of the neck. If pain, heat, and fulness be experienced in any organ or part of the body, local bleeding, by cupping or leeches, cooling purgatives, and low diet, constitute the practice usually adopted in such cases. If indigestion, flatulency, hysterical affections, liver complaints, piles, or any of the various disorders to which women are said to be more particularly liable at this period, be manifested, we must, in order to avoid repetition, refer the reader to the different parts of this work where these disorders are noticed.

"Now and then (says the experienced Dr. Blundell) women become very corpulent after the cessation of the menses, sometimes producing great inconvenience, and therefore ought always to be guarded against. Spare diet, purging, exercise, and abstinence from all fermented drinks, as ale, porter, &c. will be found the best preventives. Some women, however, are so inclined to corpulency, that they will fatten on bread and water."

Various symptoms occasionally occur which lead women to believe themselves pregnant; besides the absence of the discharge at the usual monthly periods, the breasts become enlarged,

advice. Dr. Denman, one of the wisest and most conscientious men that ever adorned the profession, states, that he "hardly recollects an instance in which such medicines did not do mischief."

tender, and sometimes painful, the belly is gradually distended from flatulence collected in the bowels, and there is sickness, and sometimes vomiting in the morning ; but these symptoms may easily be relieved by means of the usual remedies for expelling flatulence, viz. purgatives and active exercise.

MERCURY.

Mercury was used externally, in various diseases of the skin, by the Arabian physicians, upwards of a thousand years ago ; but it appears to have been scarcely known as an internal remedy until the beginning of the sixteenth century, when it was first extensively employed by Paracelsus, the St. John Long of his time. Mercury, in the crude or fluid state, is not at present used in medicine ; but, under various forms of preparation, it constitutes one of the most valuable of our remedial agents. It is carried into the general circulation in the same way as other medicines, either by being absorbed from the surface of the skin, or from that of the alimentary canal, and is conveyed along with the blood to all the tissues of the body, and, pervading every part of the system, acts as a general stimulant. Hence, from its stimulating action on the secreting organs, it is the most general evacuant we possess. When administered until it impregnates the whole system, the glands of the mouth become more particularly affected, and salivation is produced ; a specific action is also exercised on the liver, the secretion of urine and the intestinal secretions are augmented, perspiration is promoted, and the absorbent system is strongly stimulated, as evinced by the emaciation which invariably follows profuse or long-continued salivation. Although Mercury exerts a stimulating influence on the whole economy, it evidently operates more powerfully on some parts than on others ; but this peculiarity of action is quite incomprehensible. Mercury, however, is not to be regarded as a mere stimulant ; it excites in the system a new and peculiar action, different, in several respects, from every other, whether of health or disease. The nature of the action of all mercurials is the same, but the effects which they produce vary in degree according to the preparation used, the mode in which it is administered, and other circumstances.

Blue pill and calomel, in small and frequently repeated doses, are the preparations principally employed in various chronic disorders, in order to check or alter diseased action; hence they are called alteratives, and from the influence which they exercise on all the secreting organs of the body, certainly constitute the most effective remedies of this class. It is not necessary here to give rules for using these mercurials, nor to enumerate the various chronic affections which they gradually though effectually remove. The practice of opening the bowels by a blue pill at night, and a draught of the infusion of senna leaves the following morning, has been rendered popular by Mr. Abernethy, who was in the habit of extensively employing this method of treatment in various affections of the digestive organs and liver. Calomel, given in the dose of three or four grains every four or five hours, either alone or combined with a small quantity of opium, and continued until the system becomes affected, is considered one of the most powerful means of subduing various inflammatory diseases, and is much employed in croup, pleurisy, inflammation of the peritoneum, or membrane which lines the cavity of the abdomen, and other diseases which have a disposition to terminate in the formation of false membranes, or of adhesions. It is also given along with other medicines to increase their action, as with the preparations of antimony to promote perspiration, and with squills to augment the discharge of urine. As a purgative, it is usually given in the dose of from three to five grains, along with the compound extract of colocynth, jalap, or scammony.

Corrosive sublimate is seldom used internally. A useful gargle for syphilitic sores in the throat is composed of three or four grains of this mercurial dissolved in a pound of barley water, with the addition of two ounces of honey of roses; and one grain to three or four ounces of water forms a serviceable lotion for ulcerations, or specks on the cornea or anterior part of the globe of the eye.

Plummer's pill, which is composed of one grain of calomel, one grain of the golden sulphuret of antimony, and two grains of gum-guaiac, has been long celebrated as an alterative remedy in a variety of diseases, especially chronic affections of the skin, chronic rheumatism, and syphilitic eruptions; it is also of great

service in the cure of obstinate ulcers, connected with general derangement of the health.

Mercury with chalk is the mildest preparation of mercury; hence it is often used in many of the complaints of children. It acts less on the stomach and bowels than other mercurials, and is therefore frequently prescribed when calomel and blue pill cannot be borne. The dose for an adult is from five grains to a scruple.

Mercurial ointment rubbed into the skin produces the same effect on the system as other preparations of mercury taken internally; hence this is the most eligible method of inducing salivation when the digestive organs are too irritable to bear calomel or blue pill. Half a drachm to a drachm, rubbed in night and morning on the inside of the thighs, is the quantity used; but when it is necessary to produce a speedy effect, the same quantity may be employed every hour: the warm bath occasionally, favours the absorption of the mercury. This ointment is also used as a dressing to syphilitic sores, to destroy insects on the skin, and, combined with camphor, (by way of friction,) to reduce various kinds of chronic tumours.

MILK ABSCESS.

Milk Abscess may arise from not putting the child to the breast at a sufficiently early period after delivery, neglecting to preserve a regularity of action in the bowels, the too early use of wine, porter, or any other kind of strong drink, exposure of the bosom in suckling, and irritation produced by the child in the act of sucking. In Sir Astley Cooper's opinion, the chief cause of inflammation, and consequent suppuration of the breast, is "the rush of blood which takes place each time the child is applied to the bosom, and which, by nurses, is called the *druught*, and is the preparatory step to the secretion of milk."

Inflammation may attack both the breasts at the same time; but is generally confined to one only, and it often happens that after one is healed the other becomes inflamed. The acute form of this affection usually commences three or four days after delivery; the breast becomes hot, painful, swollen, hard, and

red at particular parts, or over its whole surface. The local symptoms are accompanied with fever, which is more or less severe according to the extent and intensity of the inflammation. Sometimes the pain becomes excruciating, and is increased by the slightest movement; the patient is deprived of sleep; the whole breast is enlarged, and the swelling and pain even extend to the arm-pit. In some cases, the breast acquires a lobulated or knotted appearance, as if there were several distinct tumours. There is no danger to be apprehended from this disorder, however painful it may be.

TREATMENT. The first indication is to prevent the inflammation terminating in the formation of matter: but the means usually employed for this purpose are not likely to be successful unless resorted to at a very early stage; and in numerous instances, in spite of the most active remedies, suppuration cannot be prevented. If the woman be robust, twelve or fifteen ounces of blood should be taken from the arm, but if she be of a delicate and irritable constitution, local bleeding, by the application of ten or twelve leeches to the part, should be had recourse to; the bowels ought to be freely acted upon by repeated doses of *Epsom salts*, *Seidlitz powders*, or any other cooling saline purgative. Low diet is to be strictly enjoined; and the breasts are to be drawn at proper intervals by means of the breast glass or pump, this operation being performed as gently as possible. Mr. Earle states that a simple method of drawing the breasts is to procure a wide-mouthed gooseberry bottle, and expel the air from it by immersing it in hot water. When applied to the breast, a vacuum is formed, and the milk flows abundantly. When the leeches have fallen off, the breast should be kept cool, by the constant use of the lotion directed at page 4, or by one of the following:—

No. 250.

Sal ammoniac, (muriate of ammonia,) half an ounce,
Vinegar, and
Rectified spirit of wine, of each a pound. Mix.

No. 251.

Sal ammoniac, an ounce.
Spirit of rosemary, a pound. Mix. (*Justamond.*)

No. 252.

Mindererus's spirit, (solution of the acetate of ammonia,) Rectified spirit of wine, and Water, of each four ounces. Mix.

If cold applications increase the patient's suffering, warm linseed or bread poultices, are to be substituted, or the well-known popular mode of applying warmth, called by nurses 'bowling the breast,' may be employed. A wooden bowl, well heated by immersion in boiling water, is to be wiped dry, and the breast, being properly protected by flannel, is then to be placed in it, and supported by a suitable bandage. The dish retains the heat a considerable time, and thus an equal degree of warmth is constantly applied, under the soothing influence of which, the milk often flows copiously, to the great relief of the patient.

To moderate the feverish symptoms, and alleviate the pain, the subjoined draught may be given every four hours.

No. 253.

Mindererus's spirit, three drachms, Solution of the acetate of morphine, (page 475,) from five to eight drops, Water, sweetened with a little sugar, two ounces. Mix.

The treatment, then, consists in repeated leeching, purging,—means which must never be neglected—and the employment of cold or warm applications to the part, according to the feelings of the patient. If these means fail, and we are unable to prevent the formation of matter, throbbing of the part commences, and the pain and swelling diminish; fomentations of decoction of poppy-heads, marshmallows, or linseed; and warm poultices are then to be applied, and continued until matter can be felt fluctuating. The general rule is to evacuate the matter with a lancet; but Sir Astley Cooper, whose practical instructions must ever be considered of the greatest value, makes the following observation. "If the abscess be quick in its progress, if it be placed on the anterior surface of the breast, and if the sufferings which it occasions are not excessively severe, it is best to leave it to its natural course. But if, on the contrary, the abscess in its commencement be very deeply placed, if its progress be tedious, if the local sufferings be excessively severe, if there be a high degree of irritative fever, and the patient suffer

from profuse perspiration and want of rest, much time is saved and pain avoided by discharging the matter with a lancet."

As soon as the matter is evacuated, a *tent*, or small piece of lint, or soft linen rag, is to be placed in the wound, in order to prevent it from healing before the cavity has filled up from the bottom; without this precaution, the opening would soon close, matter would again accumulate, and become the source of further suffering. The matter at first has a strong smell, and some time afterwards it comes away mixed with milk. Poultices should be applied over the tent; and after a few days, when the cavity is nearly filled up, the latter may be withdrawn, the poultices discontinued, and any simple dressing applied until the part is entirely healed.

Acute inflammation of the breast, as we have already mentioned, generally commences three or four days after delivery; but a woman is liable to abscess of the breast as long as she continues to suckle her child, though it generally occurs within the first three months after parturition. When an abscess forms at a late period, the inflammation is generally chronic; the pain may be severe at first, afterwards scarcely felt, then returns again, and may go on in this manner a considerable length of time; at last matter forms, and the lancet is required to give it vent. Chronic inflammation sometimes causes a hard tumour at a particular part of the breast, which remains in an indolent state for some time, and finally disappears without suppurating. The best means of dispersing these indolent tumours are frequent friction with *camphorated mercurial ointment*, the *iodine ointment or liniment*, page 95, Nos. 77 and 78, or two drachms of camphor, mixed with the yolk of an egg; this last was strongly recommended by a distinguished French professor, Marjolin; and occasional doses of calomel and rhubarb.

MILK FEVER.

It frequently happens that women are affected, on the third day after delivery, with headache and feverish symptoms, generally preceded by slight shivering, or a sensation of chilliness; the skin becomes hot, the pulse full and quick, the tongue dry, with considerable thirst, and the breasts are turgid, and tender or painful.

To counteract this state of febrile excitement, the child ought to be applied to the breasts at an early period after delivery, and this should be done repeatedly until the milk begins to flow. On the third morning, a mild dose of castor oil, (half an ounce,) lenitive electuary, or rhubarb and magnesia, should be taken: but cooling saline purgatives are to be preferred if there be a tendency to fever.

No. 254.

Rhubarb, ten grains,
Sulphate of potash, a drachm,
Peppermint water, an ounce,
Water, an ounce. Mix.

To be given as a dose, and repeated, if necessary, at the expiration of four hours.

If the breasts become much distended with milk, and if relief be not afforded by frequently putting the child to them, it will then be advisable to draw off two or three spoonfuls of the milk by means of a breast glass or pump.

To subdue the feverish symptoms, two scruples or more of nitre dissolved in barley water may be given in the course of the day; the bowels are to be pretty freely acted upon by laxative draughts, as above directed, and low diet must be strictly enjoined.

Milk Fever seldom continues longer than twenty-four or thirty hours, and is generally carried off by a copious flow of milk from the breasts, by profuse perspiration, having a sour smell, or by looseness of the bowels.

MINDERERUS'S SPIRIT.

Mindererus's Spirit, or solution of the acetate of ammonia, is much employed as a sudorific. It promotes perspiration, without quickening the circulation, or increasing the heat of the body; hence it is given in fever, acute rheumatism, and other inflammatory disorders, where stimulating sudorifics are inadmissible. The dose is one or two table-spoonfuls every two or three hours, warm barley water, or some other mild beverage, being taken freely to promote its operation. It is usually taken in combination with nitre and the preparations of antimony.

MISCARRIAGE.

The expulsion of the child from the womb at any time between the seventh month and the full term of *utero-gestation*, is called *premature labour*; and when the foetus is expelled before the seventh month, the process is called *Miscarriage* or *abortion*. In the latter case, the foetus is either already dead, or its different organs are not sufficiently developed to admit of life being sustained.

The predisposing causes of Miscarriage are various; it may arise from the state of the woman; or from the death of the foetus, either in consequence of disease of itself, or of its appendages. When the product of conception is deprived of vitality, it acts as a foreign body, and stimulates the womb to expel it. “The blighted embryo is thrown off from the parent, as fruit which has become withered is separated from the branch of the tree on which it has been produced.” Nothing has a greater tendency to induce Miscarriage than a congested or overloaded state of the blood-vessels of the womb; hence, voluptuous full-blooded women, as well as those of a delicate frame, and nervous irritable temperament, who lead sedentary lives and live on rich stimulating food, sleep on soft beds, and indulge in the various luxurious habits of fashionable life, are more especially subject to this accident; and there can be no doubt that women miscarry more frequently at the menstrual periods, during the first months of pregnancy, than at any other time, which is owing, in all probability, to the natural afflux of blood to the womb at those periods. Miscarriage may also be produced by deformity of the bones of the pelvis or spine; chronic diseases of the womb; acute diseases, as pleurisy, fever, scarlatina, &c.; extreme debility, and by disorder of the general health. To these may be added previous miscarriages, certain conditions of the womb unfavourable to child-bearing; pregnancy at a very early or late period of life; and among the lower classes Miscarriage is frequently caused by bodily fatigue and trouble of mind.

So many circumstances in life act as occasional causes of Miscarriage, that the limits of this work will only allow us to notice some of the principal of them, among which may be mentioned, various mental emotions, as sudden fright, anger, joy, disappoint-

ment, and distress of mind from whatever cause; violent coughing, excessive purging, or constipation of the bowels, profuse blood-letting, falls, blows, sea sickness, the extraction of a tooth, and the various causes which excite undue determination of blood to the womb, as over-exertion in walking, riding, or dancing, errors in diet, and immoderate sexual indulgence.

Some women are so constituted, that any of the above-mentioned causes may readily induce Miscarriage, whereas in others it cannot be brought on by the strongest moral or physical causes. In 1828, a woman in the island of Dominica, while gathering coffee berries in a narrow valley situated between two ranges of high mountains, had her right leg mutilated in a shocking manner by a violent blow from a large piece of rock which had rolled down from the side of an adjacent ravine. We saw her a few hours after the accident, and found it necessary to amputate immediately, at the upper part of the thigh; and though the patient was in the sixth month of pregnancy, she did well, and gave birth to a healthy child at the full term of gestation. Madame La Chapelle, a distinguished teacher of midwifery at Paris, mentions the case of one of her pupils, who becoming pregnant, and knowing that she had deformity of the bones of the pelvis, which would prevent her being delivered in the natural way, and dreading the Cæsarean operation, threw herself into a cellar, with the intention of causing Miscarriage; this effect however was not produced, and she died some time after, in consequence of the injuries received from the fall. Numerous cases are recorded of violent means having been unsuccessfully employed to procure abortion, and it cannot be too generally known that even where these criminal measures do succeed, it is often at the expense of the woman's life. The symptoms preceding or accompanying Miscarriage, vary according to the period of pregnancy at which it occurs; during the first two months, the embryo or foetus is discharged without pain or much loss of blood, and it often happens at this early stage that the woman is not aware she has miscarried, and attributes the discharge to the return of the menses. At a later period, the death of the foetus is announced by great depression of strength and spirits, palpitation of the heart, paleness of the countenance, fetidity of the breath, a sensation of coldness and weight at the lower part of the belly, mucous

discharge from the genital organs; sometimes there is frequent desire to void urine, and after the middle of the fifth month, the movements of the child cease to be felt. These signs are followed by more or less profuse flooding, and clots of coagulated blood may be observed, which serve to distinguish this discharge from that of the healthy menstrual fluid, which never coagulates. The flooding is accompanied with acute pain, extending from the navel to the genitals, and bearing down pains resembling those of regular labour, are occasionally felt. At last the foetus comes away, and is generally enveloped in its membranes when the accident occurs before the third month of pregnancy; in the following months the membranous bag containing the foetus, bursts, and the waters are immediately discharged; then the foetus comes away, and finally, the after-birth. Here we observe a wise provision of nature in adopting two different ways of expelling the product of conception, according to the period of pregnancy. During the first three months, the placenta or after-birth is proportionally larger than the foetus; if therefore the latter were discharged along with the waters, the womb being no longer excited to the same extent, would cease to exercise its expulsive efforts, while its mouth would gradually close, and thus the placenta might be retained for many weeks, and give rise to flooding and other untoward symptoms. On the other hand, during the last five or six months of pregnancy, the foetus being the larger body, is discharged first, and thus prepares the way for the placenta, which is then generally expelled from the womb without any trouble. We see in this an admirable illustration of the wisdom which nature invariably displays in choosing the most simple, the easiest, and the least dangerous way of effecting her ends.

Sometimes symptoms threatening abortion, continue during two or three days; the woman is at first attacked with rigors or shiverings; shortly afterwards the pulse becomes quick and full, the skin hot with thirst, and other signs of general excitement, accompanied by a sensation of weight and fulness at the lower part of the belly and loins, followed by discharge of blood from the womb in larger or smaller quantity, with pains at intervals, resembling those which take place at the commencement of natural labour. When such symptoms are manifested, Mis-

carriage is very likely to occur, yet, by timely and judicious treatment this accident may be averted, the bearing down pains may be suspended, the flooding checked, and the womb may retain the child until the full period. But, when the mouth and neck of the womb soften, and the bag of waters begins to protrude, while the discharge and contractile pains continue, all our efforts to prevent Miscarriage will be fruitless.

Miscarriage takes place most frequently during the first three months of pregnancy; when it happens in consequence of the gradual decay and death of the foetus, which is by far the most common cause, it is less dangerous than when it occurs suddenly from accidental or violent causes; under all circumstances the danger increases with the advance of pregnancy. Sometimes the after-birth is retained for several weeks after the foetus has been expelled, becomes putrid, and is discharged in detached pieces, or it may remain during several months, and then be thrown off in a shrivelled or partially dried state, or in the form of a fleshy mass.

"The embryo may die before the end of the third month, and not be expelled till the fourth or fifth month; or a foetus of seven or eight months may lose its vitality, and not be expelled till the full period of gestation is completed. In twin cases, one foetus may die in the latter months, and be retained until the full period, and then expelled with the living child."—*Dr. R. Lee.*

TREATMENT. When, from the symptoms above-mentioned, we have reason to believe that the foetus is dead, it would be useless to attempt preventing miscarriage; but if signs of plethora and general excitement be manifested, together with the local premonitory symptoms already noticed, we then have it greatly in our power to ward off the threatened accident, and this may even be effected after flooding and irregular pains have been experienced; but if the waters (*liquor amnii*) be discharged, miscarriage is inevitable. From twelve to sixteen ounces of blood should be immediately taken from the arm, and after a longer or shorter interval, if the symptoms continue urgent, the same quantity may be withdrawn. In all cases, but more especially where the woman is nervous, and of an irritable temperament, it is advisable to administer an opiate, (half a grain of the *acetate of morphine*, or fifteen drops of *Battley's sedative liquor of*

opium,) immediately after the bleeding, in order to allay the bearing down pains or contractions of the womb. The diet should consist of light farinaceous food, as arrow-root, sago, toasted bread, &c., and lemonade, imperial, (page 12, No. 7,) soda water, or any other cool beverage, may be drunk freely. But the most essential part of the treatment, without which neither the above nor any other means are likely to be of much service, is mental and bodily quietude. This must be strictly attended to, from the time that premonitory symptoms make their appearance until all danger is past. The apartment should be large and well-aired, and the patient should lie on a mattress or couch, with the body lightly covered. In the event of flooding coming on, cold applications are to be assiduously employed, as directed at page 459, until the discharge is arrested. When the *pains* and flooding have ceased, a little *castor-oil*, with from ten to fifteen drops of laudanum, or a mild dose of *rhubarb* and *magnesia*, may be given, to act gently on the bowels.

When all our efforts to prevent miscarriage prove ineffectual, and the foetus is expelled, while the after-birth is retained in the womb, and the flooding continues, the *ergot of rye*, or plugging the vagina, in the manner recommended under the head of Flooding, (page 297) should be employed; or the *acetate of lead*, which has a powerful effect in subduing haemorrhage, may be administered, as directed at page 460, or the following manner:—

No. 255.

Sugar of lead, from six to twelve grains,
Vinegar, one or two teaspoonfuls,
Water, three ounces,
Battley's opiate, half a drachm,
Syrup, an ounce. Mix.

A tablespoonful to be given every second or third hour, according to the urgency of the case, until the discharge of blood begins to abate.

Plugging the vagina, after delivery at the full time, is only to be used when all other means have failed, because there is a risk of blood accumulating in the womb to a dangerous or even fatal extent; but when flooding takes place at any time before the sixth month of pregnancy, there is no danger to be apprehended from closing up the mouth of the womb, inasmuch as the cavity of the organ is not then capable of containing much blood, and its

walls are too firm to admit of dilatation from this cause. It often happens, when the blood is in this manner prevented from escaping, that it coagulates, and excites irritation and contraction of the womb, by which it is after a time expelled, along with the after-birth, and then the flooding ceases. But, as Dr. Ryan remarks, the majority of women have a great objection to the operation of plugging, and, under such circumstances, its real object ought to be explained; as also the fact, that the substance about to be introduced cannot pass into the womb, bladder, or bowel; in fine, that it is only to be placed in the passage through which the infant comes into the world.

Plethoric or full-blooded women, who have previously aborted during the early months of pregnancy, should be bled at the recurrence of the menstrual periods, and remain in bed, or on a couch, for two or three days, live low, and drink freely of the imperial, or some other cooling drink. If symptoms appear threatening abortion, fifteen drops of Battley's opiate, or from eight to ten drops of the following mixture, should be taken, and the dose repeated from time to time, according to the circumstances of the case:—

No. 256.

Take of the acetate of morphine, sixteen grains.

Vinegar, eight drops,

Rectified spirit of wine, a drachm;

Distilled water, seven drachms. Mix.

Dose, from five to twenty drops.

The cold hip bath, or sponging the lower extremities and lower part of the belly with cold vinegar and water, strict attention to diet, moderate but regular exercise, cooling saline laxatives, and abstaining from conjugal intercourse during the first five months of pregnancy, will be found the best preventives of miscarriage. In delicate women of relaxed habits of body, tonic remedies, as the decoction of bark, or small doses of quinine, are required; the diet should be generous, and a moderate quantity of wine may be allowed. Cold bathing, either in the open sea, or by means of the shower bath, will be found very beneficial in all cases where a sufficient degree of re-action follows, indicated by a sense of increased vigour and alacrity, while a pleasant glow is diffused over the whole surface of the body shortly after

emerging from the water; but if the person experience a sensation of languor, chilliness, and other symptoms evincing a deficiency of vigour in the system to produce the proper re-action, we have then sufficient evidence that this practice, instead of proving salutary, might be attended with serious consequences. The same measures are to be employed when there is great debility after a Miscarriage. If much blood have been lost, and the countenance acquire a pale or chlorotic appearance, ten or twelve drops of the *tincture of steel*, or the same number of grains of the *subcarbonate or prepared rust of iron*, with an equal quantity of *aromatic powder*, may be substituted for the vegetable tonics.

MORTIFICATION.

Either in consequence of a very severe degree of inflammation, or from other causes presently to be mentioned, the vital power of certain parts of the body is lost; they gradually die, and are submitted to the same laws of decomposition as the whole body is after death. Mortification, then, is simply the death of some portion of the human frame, during the life of the individual.

The appearances of a mortified part are very striking, and when once seen can seldom be mistaken afterwards. They are best observed in cases of Mortification from cold, or in that peculiar form of the disease which often attacks the extremities of old people, and is called by surgeons *senile gangrene*. The parts so affected lose gradually all feeling, the natural heat is also lost, and the mortified portion of the body or limb becomes quite cold; it is of a brown, livid, or black colour: decomposition now takes place sooner or later; the scarf-skin is raised up in blebs, from the gaz which is disengaged by the decomposing flesh; a very offensive odour is emitted, and any discharge which may accompany the Mortification is of a highly fetid kind: the dead part is now either removed from the body by a natural process, or excites a species of low fever, which eventually terminates in death.

It should, however, be remarked, that in many cases Mortification is not so complete as we have just described it to be; but is preceded by what medical men call *gangrene*. Here the parts are not completely dead, but are, more or less, rapidly approach-

ing to a state of Mortification ; the powers of life in the part are much diminished, but not quite extinct ; some feeling still remains, and the blood circulates in some of the vessels. Should this state happen in an open sore, we are made aware of its occurrence by diminution of the pain ; by the fetid smell of the discharge ; and the mixture of dark-looking, putrid portions of gangrenous flesh which are detached from the surface of the injured part with the poultices or other dressings.

CAUSES AND SYMPTOMS. One of the most frequent causes of Mortification is unquestionably inflammation. When certain parts of the body are violently inflamed, (more especially if the inflammation be of an erysipelatous kind) they are subject to partial or complete Mortification, and this is the more to be dreaded in persons of dissipated habits, or those whose health is reduced by poor food, bad air, and irregular modes of life. When Mortification is about to take place, we generally find that the pain and fever which accompanied the inflammation suddenly diminish or altogether subside ; the affected part gets soft, and loses its natural heat and feeling, while at the same time it assumes a dark or livid colour ; the scarf-skin soon becomes separated from the true skin underneath, and sometimes vesicles or blebs, filled with fluid, and resembling small blisters, appear on different points of the mortified surface. We should observe that our description is confined to Mortification of *external* parts, for when any of the internal organs are attacked by Mortification, the case is altogether beyond the reach of medicine.

It can be readily understood that the life of any portion of the body cannot be sustained without a due supply of blood and nervous power ; hence any cause which suspends or interrupts this supply may excite Mortification. Familiar examples of this are seen in the Mortification of a tumour, or any part of the body round which a ligature has been tightly drawn, and in the death of the gut which is submitted to strong pressure in cases of strangulated rupture. For the same reason, long-continued pressure will often occasion Mortification, as we frequently see in cases of typhus fever, &c. Cold, also, is often another cause : and people should always remember that when parts which have been frost-bitten or frozen are suddenly warmed, they are very apt to be attacked by gangrene and Mortification.

In addition to these and other external causes of Mortification, there are some which act internally. The most remarkable example of the latter is seen in the effects occasionally produced by eating bread made of bad black wheat or rye. We have said that any serious impediment to the due supply of blood to a part may cause Mortification, and of this we have an illustration in Mortification of the toes and feet, which occasionally attacks persons advanced in life; here the disease is mainly attributable to an ossified (bony) state of the vessels, which impedes the flow of blood, and prevents the part from receiving the necessary quantity of vital fluid.

The general or constitutional symptoms accompanying Mortification vary much with each individual case, and are considerably modified by the extent of the disease, or the constitution of the patient. In some cases, the degree of fever which attends Mortification is so small as almost to escape notice; but, generally speaking, we find more or less fever of a low, nervous kind, accompanied with restlessness, lowness of spirits, and, in severe cases, with delirium. As the disease advances, cold sweats break out, the patient is often troubled with constant hiccup, and dies in a stupid or delirious state. In more favourable cases, the symptoms suddenly abate, and on examining the affected parts, we shall find the edges of the mortified substance surrounded by a *red* line. This indicates that nature is endeavouring to cure the disease herself; and if the patient be sufficiently strong to bear up for some time under the complaint, the Mortification is arrested at this red or inflammatory line, the dead parts separate from the living, the loss of flesh is repaired, and recovery eventually takes place.

TREATMENT. The treatment of Mortification naturally resolves itself into two kinds; first, the local or external remedies which should be applied to the affected parts; second, the internal remedies. But, as we have already stated, Mortification may be either a consequence of violent inflammation, or it may arise from certain causes which seem to debilitate the constitution of the individual. In the first case, our chief attention must be directed to the inflammatory state preceding, and obviously producing, gangrene. In strong, robust, and full-blooded individuals, when the fever runs high, and there are few or no

symptoms of debility, we must take blood from the arm, and endeavour to reduce the febrile action by purgatives and diuretic medicines, at the same time restricting the patient to severe diet. When the inflammatory symptoms have been removed, or when from the beginning the Mortification is attended with low nervous fever, and the patient seems to be sinking under the disease, it will be absolutely necessary to support his strength by a mild, nourishing diet, and by cordials: the best cordial, perhaps, which we can give is a wineglassful of sherry or madeira wine, every four hours, or oftener, according to the necessities of the case.

Peruvian bark was at one time considered almost as a specific in cases of Mortification; but, at the present day, its use is limited to those cases of the disease which are attended with low typhoid fever, and in which the functions of the stomach and bowels are not much deranged. From two to four drachms of the powdered bark may be given in water, or, according to circumstances, in wine, every three or four hours. During the administration of the bark, care must be taken to keep the bowels open by some mild laxative medicine; but active purging should not be encouraged, or allowed to persist if it occur.

As in many cases of Mortification, the pain, restlessness, and anxiety of the patient are distressing, we must endeavour to mitigate the pain and relieve the suffering by opiate medicines. These may be combined with the bark, if the latter be given, or with a few grains of nitrate of potass, or camphor. In England, pure opium is the narcotic generally employed; but as it has been proved that in many cases opium produces a stimulating effect, it will be more prudent to administer half a grain of the acetate of morphia every five or six hours.

However, in the peculiar species of Mortification which attacks the toes and feet of old people, Mr. Pott has satisfactorily shown that we may give one grain of solid opium, every three or four hours, with advantage.

The *local* treatment of Mortification is very simple. The best thing that we can do is to envelope the mortified part in a large poultice, and renew the latter as often during the day as cleanliness may require. The following poultices are those most frequently recommended by surgeons:

No. 257. CHARCOAL POULTICE.

Add about *two ounces* of finely powdered charcoal to half a pound of common linseed poultice.

No. 258. BEER POULTICE.

Take of the grounds of strong beer half a pint; add as much oatmeal as will make it pretty thick, and then stir it up.

No. 259. YEAST POULTICE.

Add to an infusion of malt as much oatmeal as will render the substance of a proper thickness, and then add a spoonful of yeast. When the mortified portions are being detached, and the patient complains of much pain, we may add two or three teaspoonfuls of laudanum to the poultice.

To counteract the fetid discharge and smell which always attend cases of Mortification, we may use with advantage the *chlorine lotion*, composed of one part of chloride of lime to eight parts of water.

Mortification, as we have said, often attacks parts of the body thinly covered with flesh, in persons who have been debilitated by typhus fever, or who have been long confined to bed by palsy, &c. Here our first care should be to prevent the *pressure* on the skin which occasions Mortification, and this may be accomplished by attention to posture; by placing pads or pillows under the limb or back, and by changing the position of the patient as often as we can; for these cases, the common poultice, with laudanum, or the yeast poultice, are the best local applications which we can employ.

As for scarifying the parts, removing sloughs with the knife, or applying the hot iron, these are proceedings which could only be intrusted with safety to a medical man.

MUMPS, OR BRANKS.

This disease is seated in the parotid gland and surrounding cellular substance. It is sometimes epidemic, and is generally believed to be contagious. It usually commences with slight shivering, followed by hot skin, thirst, and other feverish symptoms, which seldom run high. The constitutional derangement is soon followed by swelling under the angles of the jaws, gradually extending over a considerable part of the throat,

affected. The swollen parts feel firm and elastic, are slightly red, and tender or painful. When the tumefaction is extensive, there is some difficulty in swallowing, and pain on moving the jaws. The disease generally begins to subside on the fourth or fifth day, and in the course of a few days the neck resumes its natural appearance; but in some cases when the swelling is diminishing at the neck, the testicles in males, and the breasts in females, become swollen; this continues for some days, and then disappears gradually. Sometimes, however, the testicles remain enlarged for a considerable length of time. When the disease is confined to one side of the neck, the testicle or breast of the same side only is affected. This disease occurs most frequently in children, and generally in those of scrofulous constitution.

TREATMENT. The Mumps seldom require medical treatment. Stimulating food and drink should be avoided; mild laxatives are necessary, and a little purified nitre dissolved in barley water may be taken. The neck should be protected from cold by covering it with fine flannel. If the testicles or breasts become swollen and painful, it will be advisable to apply leeches, and afterwards warm fomentations of marshmallow, or poppy heads, and warm poultices of linseed or bread and milk.

MURIATIC ACID.

Muriatic Acid is not much used in medicine. It is sometimes employed both internally and as a gargle in typhus fever and scarlatina, and is strongly recommended in the malignant forms of these disorders by Dr. Paris. From forty drops to a drachm, mixed with barley-water, and sweetened with sugar, may be given in the course of twenty-four hours: as a gargle it is used with the infusion of roses, this acid being substituted for the sulphuric acid. Mixed with a strong infusion of quassia, Dr. Paris considers it to be the most efficacious remedy for preventing the generation of worms. From eight to fifteen drops, mixed with four ounces of water, are used by some practitioners as an injection for the cure of gonorrhœa. Muriatic Acid is a better remedy than mercury in syphilitic cases, where there is constitutional irritability complicated with debility.

MUSK.

Musk is a peculiar secretion which is deposited in a small sac situated near the umbilicus of the *Moschus Moschiferus*, or Musk Animal, a native of the Himalaya mountains, and other elevated regions of Asia. This substance, like *castor*, another animal secretion, is understood to be powerfully antispasmodic. It was a favourite remedy with Cullen. "I maintain," says this author, "that Musk, (when genuine) is one of the most powerful antispasmodics that we are acquainted with. I have found it, with Dr. Wall, to be a powerful remedy in many convulsive and spasmodic affections, and in some of a very peculiar kind. I had once a gentleman affected with a spasm of the pharynx, preventing deglutition, and almost respiration. This, when other remedies had failed, was relieved by the use of Musk, which often showed its power; for the disease continued to recur at times for some years after, and was only obviated or relieved by the use of Musk."

The dose is from six to twenty grains, repeated, if necessary, every five or six hours. It is difficult to obtain genuine, and is at present more employed by the perfumer than the physician.

MYRRH.

This gum resin is brought from Arabia and Abyssinia—the plant from which it is obtained is not yet accurately known. The medicinal effects of Myrrh are tonic and stimulant; it is seldom given alone, but is in common use in the dose of from five to twenty grains, conjoined with the prepared rust of iron, to promote the menstrual discharge. The tincture of myrrh is employed in gargles, in dressing foul sores, and as a wash for the teeth and gums.

NETTLE-RASH.

This rash or eruption on the skin takes its name from the close resemblance which it has to that produced by the stinging of nettles. No part of the body is exempt from Nettle-Rash. It appears in large, flat, elevated patches or wheals, of irregular

shape, hard, of a pale red colour, but in some instances whiter than the surrounding skin, and is attended with severe itching and tingling. The eruption is sometimes accompanied by a slight degree of fever, in other cases it appears suddenly, without any constitutional disturbance. It generally appears in the morning, vanishes in the course of a few hours, and perhaps reappears twice or thrice in the course of the day. After breaking out repeatedly in this manner, it usually disappears entirely at the expiration of six or eight days, sometimes much sooner. Nettle-Rash occurs most frequently in young people, and females; it is generally if not always connected with disorder of the digestive organs, and, in particular constitutions, is readily produced by certain articles of food, as lobsters, crabs, mussels, and other kinds of shell fish; cucumbers, mushrooms, &c. It sometimes arises from eating salmon or mackerel; and in the West Indies we have known the same effect produced by the king-fish, barracuta, and land-crab.

TREATMENT. The treatment is exceedingly simple. In mild cases little will be required beyond light farinaceous diet and gentle laxatives. When the eruption appears after taking into the stomach certain substances which disagree with it, or to which it is unaccustomed, an emetic of *ipecacuan* generally effects a cure; and in cases where the feverish symptoms are urgent, and the itching severe, the loss of ten or fifteen ounces of blood from the arm seldom fails to remove the disorder. Nettle-Rash generally yields in the course of two or three days under the use of low diet, mild laxative medicine, and drinking freely of lemonade, or barley water containing a little nitre.

NIPPLES, SORE.

Women when nursing are liable to have Sore Nipples, a complaint which is very troublesome, and, in many cases, not easily got rid of. This may sometimes be prevented by washing the Nipples frequently, during a month or two before delivery, with equal parts of the *tincture of myrrh*, and a strong *decoction of oak bark*. When, however, the Nipples have become excoriated and chapped, an artificial teat, attached to a shield, should be employed, and the following lotion, recommended by Sir Astley Cooper, may be used.

No. 260.

Borax, one drachm,
Water, three ounces and a half,
Spirit of wine, half an ounce. Mix.

The late Professor Hufeland recommended the subjoined formula.

No. 261.

Lime water, and
Oil of poppies, of each an ounce. Mix. The excoriated nipples to be frequently anointed with this liniment.

Dr. Hannay, of Glasgow, deems *lunar caustic* the best application for a Sore Nipple; it should be used in the following manner. Having gently, but carefully dried the Nipple, the part is to be freely touched with a sharp pencil of *lunar caustic* (*nitrate of silver*), which is to be insinuated also into the chaps and chinks. The Nipple is then to be washed with a little warm milk and water. The pain soon subsides, and the sore may then be healed with a little *zinc ointment* (*Turner's cerate*).

Great care must be taken not to allow the sore parts to stick to the clothes; to prevent this occurrence the popular plan of placing a *fresh ivy-leaf* over the Nipple, every time the infant is removed from the breast, is very serviceable.

NITRE.

Nitre (Nitrate of Potash, Saltpetre) is an excellent refrigerant, and is used for this purpose in all inflammatory diseases and haemorrhages. This salt, given in small and frequently repeated doses, to the extent of a drachm, or eighty grains, in the course of twenty-four hours, in cold water, toast water, or barley water, (each dose being dissolved at the time it is to be administered,) diminishes the strength and frequency of the pulse, while it lowers the animal heat, and abates thirst; and is consequently regarded as an antiphlogistic remedy of great value.

Nitre is sometimes given as a diuretic in dropsical cases; and in the proportion of a drachm and a half to half a pound of water, is frequently prescribed as a gargle in different kinds of sore throat.

Five ounces of Nitre, with five ounces of sal ammoniac (muriate of ammonia) dissolved in sixteen ounces of water, will reduce the temperature of the liquid forty degrees. Hence this mixture placed in a bladder is used as an external application, in various cases; to the head in inflammation of the brain and apoplexy, to the lower part of the belly in some cases of retention of urine, to the belly in violent floodings; and to hernial tumours (when ice cannot be obtained) to diminish their size and facilitate their reduction.

NITRIC ACID.

Nitric Acid is often of great service in syphilis, when mercury is contra-indicated. It is more particularly useful when the disease is complicated with scrofula or scurvy, when it is accompanied with much debility, and, in patients whose constitutions have suffered from the excessive use of mercury; in such cases it is generally given along with the compound decoction of sarsaparilla—sometimes it produces salivation. The diluted Nitric Acid of the pharmacopœia is the form in which it is generally used; this is prepared by mixing one fluid ounce of Nitric Acid with nine fluid ounces of distilled water, and the dose is from twenty to thirty drops, in water sweetened with syrup or sugar, three times a day. This acid injures the teeth, it is therefore advisable to drink the mixture through a glass tube, and afterwards wash the mouth.

Nitric Acid is given in the same manner as the sulphuric and muriatic acids, in cases of gravel, where the urine deposits a white sediment.

As an application to certain ill-conditioned or sloughing ulcers, Sir Astley Cooper recommends a lotion composed of fifty drops of Nitric Acid to a pint of water. Some practitioners use two drachms of the diluted acid mixed with an ounce of water, as a stimulating application to fetid sores attended with a thin acrid discharge.

OPIUM.

Opium is the concreted juice of the capsule or head of the white poppy, (*Papaver Somniferum*.) This plant is extensively

cultivated in Persia, Turkey, Egypt, Hindostan, and other countries of Asia, not only for the purpose of obtaining Opium, but also for the sake of the oil which is produced from the seeds—in some countries the latter are used as food, and are considered both wholesome and highly nutritious. Nearly the whole of the Opium consumed in Europe is the produce of Persia, although it is generally called Turkey Opium.

Opium is now grown to a great extent in the East Indies, whence it is nearly all sent to China, where a watery extract is prepared from it called *chandoo*, which is principally used in smoking; and it appears that this practice, if not carried to excess, is just as harmless as smoking tobacco or drinking a moderate quantity of wine; and under all circumstances must be considered as less pernicious and destructive of life than the habit of gin and whiskey drinking so prevalent in our own islands.

Poppies are cultivated to a considerable extent in this country on account of the capsules, commonly called *poppy-heads*, a decoction of which is of great service as a fomentation to inflamed and swollen parts, to painful ulcers, and to the abdomen in cases of inflammation of the stomach, intestines, and other internal organs. This decoction is prepared by boiling four ounces of the heads, including the seeds, for a quarter of an hour in water.

Opium was known to the ancients, and has been used in medicine since the time of Hippocrates; in this country its medicinal virtues do not appear to have been well understood, until the knowledge of its inestimable value in the healing art was disseminated by the illustrious Sydenham.

Various opinions have been maintained with regard to the action of Opium on the animal economy, but as the object of this volume is not to inquire into conflicting theories, but to communicate practical information, we shall confine ourselves to merely noticing the circumstances under which this remedy may be beneficially employed, and the cases in which its administration would be dangerous.

Opium has the effect of rendering the pulse fuller, stronger, and quicker; the latter action, however, is not always produced, for example, when the pulse is quick and frequent, in consequence

of debility, Opium makes it slower and more regular, and strong doses render it even slow, and similar to that which is met with in apoplexy. A moderate dose taken when in a state of health always slightly accelerates the pulse.

Opium seems to have the effect of expanding the blood, inasmuch as it renders the pulse full, while it enlarges the blood vessels, and in fact appears to induce a state of artificial plethora. The blood accumulates more especially in the brain and lungs, and in parts predisposed to congestion. This increased action of the vascular system invariably augments the heat of the body. Hence it is obvious that it would be highly improper to administer opium in acute inflammatory diseases, at the commencement of fever, where there is much plethora or fulness of blood, or where there is a tendency to haemorrhage or discharge of blood from any internal organ.

Opium, besides the property which it possesses of increasing the action of the heart, and the fulness and frequency of the pulse, exerts a powerful influence as a *narcotic*, that is, in diminishing the sensibility of the nervous system, allaying pain, and procuring sleep. But when the pulse is hard, the skin hot and dry, and other feverish symptoms are present, or when we have reason to believe that inflammation is commencing, it would be improper to administer opium as a narcotic, because its primary or stimulating action would certainly aggravate the symptoms. Under such circumstances, when it is found necessary to administer remedies of this class, we make choice of those not possessed of any stimulating property, such as henbane, aconite, and hemlock; or if opium be considered preferable, we must then give it in conjunction with ipecacuan, and the sulphate of potash, (see *Dover's powder*,) or with nitre and antimony, in order to neutralize or prevent its stimulating effect.

Opium, then, is generally understood to possess the double action of exciting the heart, and diminishing the sensibility of the nervous system. But it must be borne in mind, that these effects are greatly modified by peculiarity of constitution, the dose, and manner of administering the remedy. Small doses, when frequently repeated, excite the blood vessels of the brain, and induce that condition of the nervous function which has the effect of exhilarating the mind, quickening the imagination and

producing the same pleasurable sensations as wine; on the other hand, when a large dose is given, the stimulating action is of short duration, the brain soon becomes oppressed from accumulation or congestion of blood; while, at the same time, the narcotic effect of the remedy is exerted, and stupor or profound sleep is the consequence, the throat is rendered dry, the bowels are constipated, the urine is diminished, and the appetite is impaired. In fact, Opium suppresses or diminishes all the secretions, except that of perspiration, which it generally promotes.

The action of Opium on the system is greatly modified by custom; by repetition, the influence of ordinary doses becomes so diminished, that, when its palliative or soothing effects are required in cancer and other painful diseases, it is always found necessary to increase the quantity. This is sometimes done to an enormous extent in Turkey, and very frequently in this country, by those who take it on account of the excitement, and peculiarly comfortable and exhilarating effects which it produces. Many of the Turks who frequent the opium-shops of Constantinople swallow as much as a hundred grains daily: they generally take it mixed with spices, and made into small lozenges, stamped with the words *Masch Allah*, the Gift of God. Dr. Russel, in his history of Aleppo, mentions the case of a Turk, in Smyrna, who took three drachms of opium daily; and in the "Confessions of an Opium-Eater," an interesting little work, which there is reason to believe has been the means of increasing the consumption of Opium in this country, the author confesses to have taken eight thousand drops of laudanum daily. With many people, opium-eating does not appear to produce any injurious effects on the constitution: we have known agricultural labourers to indulge in this practice for years, and nevertheless appear florid, robust, and healthy; but among people engaged in sedentary occupations, in large towns, where this pernicious habit prevails at present to a very great extent, it gradually impairs the bodily and mental energies, disorders the digestive organs, renders the countenance pallid and shrunk, and tends greatly to shorten life. Few have strength of mind to overcome this alluring vice, and perhaps there is no other bad habit so difficult to conquer as the abuse of Opium.

In many dangerous diseases, the judicious use of Opium is

often the means of saving life; but, in unskilful hands, there can be no remedy more dangerous. *Sacra vitæ anchora, circumspecte agentibus est opium, cymba vero Charontis in manu imperiti.*—*Wedel.*

In purely spasmodic asthma, Opium, in the dose of a grain and a half, or two grains, often has the effect of shortening the fit, and sometimes of stopping it. Tetanus has sometimes been cured by large doses of Opium. The tincture of Opium, or laudanum, either taken into the stomach, or administered in the form of enema, may be advantageously employed to relieve hysterical fits. It is the best remedy that can be employed in cholera, cholic, and diabetes; and in dysentery, after free blood-letting, Opium conjoined with calomel is the remedy principally to be relied upon. In the dose of two grains, taken shortly before the commencement of the cold stage of ague, it frequently has the effect of rendering the attack milder, and sometimes of preventing it altogether. In many inflammatory diseases, after bleeding, when the pain is severe, while the pulse is soft, Opium has often an excellent effect; and in Great Britain it is extensively employed, in combination with calomel and tartar emetic, to subdue inflammation, and prevent the effusion of lymph. In delirium tremens, or the mania of drunkards, it is almost a specific; and in many cases of insanity, accompanied by extreme watchfulness, where the individual is not of a plethoric habit of body, and where there is no tendency to inflammation, the soothing and soporific virtue of full doses of opium is often of great service in quieting the patient, diminishing irritation, procuring sleep, and paving the way to the return of reason. The effect of repose in controlling mania, and assisting to restore the sufferer to reason, is thus admirably expressed by Shakspeare.

Cordelia. What can man's wisdom
In the restoring of his bereaved sense?

Physician. There are means, madam:
Our foster nurse of Nature is Repose,
The which he lacks: that to provoke in him
Are many simples operative, whose power
Will close the eye of anguish.—*King Lear, Act IV. Scene IV.*

Opium is much used externally to mitigate pain, and allay spasmodic action. When employed in this manner, it is applied in the form of laudanum, or mixed with camphorated oil, and is

found very serviceable in cholic, hysteria, and other diseases above mentioned.

Two or three grains of Opium, introduced into the rectum, are very efficacious in relieving tenesmus, spasmodic stricture, and in alleviating the pain arising from cancer of the womb.

The wine of Opium, dropped into the eye, is an excellent application in chronic ophthalmia, and is in very general use.

In 1804, a German chemist, named Serturner, discovered an alkaline substance which has been called *morphia*; this combines with several acids, and forms salts. The acetate, muriate, and sulphate of morphia, are at present in general use, and have the advantage of being less injurious to the digestive organs than solid Opium. These salts are given instead of Opium in the dose of from a quarter to three quarters of a grain; the subjoined formula is of the same strength as laudanum.

No. 262.

Acetate of morphia, sixty-four grains,
Distilled water, fifteen ounces,
Proof spirit of wine, one ounce. Mix.

The usual dose of Opium is one grain, of laudanum twenty drops,* and of the salts of morphia a quarter of a grain.

PAREGORIC ELIXIR.

Paregoric Elixir is prepared in the following manner: "Take of camphor two scruples and a half, hard opium, powdered, and benzoic acid, of each seventy-two grains, oil of anise a drachm, proof spirit, two pints; macerate for fourteen days, and strain." This remedy is much used in chronic asthma, and cough, when no inflammatory symptoms are present. A teaspoonful of it may be taken three or four times a day, and two teaspoonfuls at bed-time. Half an ounce of this elixir contains a grain of opium.

Scotch Paregoric contains ammonia, and a much larger proportion of opium (a drachm of it contains one grain). The dose is a teaspoonful, in water, at bed-time.

* Dr. Sigmond notices a very curious, and it might prove a fatal, mistake, in one of the editions of Buchan's Domestic Medicine; the invalid is there cautioned against taking too large a dose of laudanum, and, by inadvertency, instead of twenty-five drops, he is advised never to take more than twenty-five ounces.

PERUVIAN BARK.

Peruvian Bark, or Cinchona, commonly termed *bark* by way of pre-eminence, is supposed to have been known to the Peruvians long before Columbus discovered America; several authors, however, are of opinion that the Jesuits were the first to find out its medicinal virtues. The following is the generally received account of the manner in which Europeans became acquainted with this valuable remedy. In 1638, the Countess d'El Cinchon, wife of the Spanish viceroy at Lima, having suffered a considerable length of time from a severe tertian ague, and finding no relief from the various remedies which she had taken, was prevailed upon by the Spanish governor of Loxa to make use of quinquina, as it was then called, the febrifuge virtues of which had been made known to him by one of the aborigines in gratitude for some favours he had received; she rapidly recovered, and the success of the bark in this case established its reputation. In 1640, Jean d'El Vego, physician to the Count d'El Cinchon, imported a considerable quantity of this medicine into Spain, where it was first employed under the name of the Countess's powder, (*Pulvis Comitissæ*.) Linnæus, long afterwards, gave the generic name of *Cinchona* to the trees which produce the various kinds of bark. In 1649, the Jesuits carried a large quantity of *cinchona* to Rome, where ague was then very prevalent in the summer and autumn months, in consequence of *malaria*, which abounded then, as it does still, in the neighbourhood of that city. The charitable Cardinal de Luzo purchased some of this Bark at a great expense, (it was sold at first for its weight in silver,) and distributed it liberally among the indigent poor, under the superintendence of his physician, Sebastian Baldo, who was the first to publish an account of the virtues of this important medicine. The Jesuits sold the Bark in powder, in order to keep the remedy secret, and monopolized the trade in this article during many years; hence it was called Jesuits' Bark, and under this name was soon known throughout the greater part of Europe. The French authors state that Bark was for some time known in France under the denomination of *poudre de l'Anglais*, or *poudre de Talbot*, from the name of an Englishman who made known the history and preparation of the

remedy to Louis XIV. Talbot was afterwards physician to Charles the Second.

The powder, decoction, and other preparations of this medicine, continued to be extensively employed until 1820, when two eminent French chemists, Pelletier and Caventon, discovered an alkaline substance in the yellow Peruvian Bark, (*cinchona cordifolia*) which, united with sulphuric acid, is now well known as the *sulphate of quinine*. Since that time, this invaluable salt, which possesses all the virtues of Bark in a concentrated form, has been much employed, and is now in general use, being easily administered, and not producing any of the unpleasant effects of the powder or decoction; eight grains of it are considered equal to an ounce of the powder.

Bark, or the sulphate of quinine, is deservedly considered the most valuable tonic medicine we possess, and has a wonderful power in checking all periodic or intermitting diseases; the latter effect is more especially shown in ague, in which it acts almost as a specific, and also exercises, when properly managed, a powerful influence in subduing the remittent fevers of warm climates. In epilepsy, hysteria, tic douloureux, in the various convulsive diseases connected with disordered states of the nervous system, and, indeed, in all affections that appear to come periodically, this remedy exerts a decided control which is altogether inexplicable. In all disorders characterized by debility, and during convalescence from acute diseases, it gives strength and tone to the various organs of the body, and causes them to perform their different functions with energy and regularity. In erysipelas, mortification, extensive suppuration, scrofula, dropsy, haemorrhage, unconnected with plethora or inflammation, indigestion, not depending on irritation or chronic inflammation of the stomach, and in various other disorders, the permanent tonic effect produced by Bark or quinine is of the greatest advantage. Indeed, this remedy possesses so remarkable a power in strengthening and giving tone to the system, and the success which has followed its employment has been so great in numerous disorders, that Dr. Robertson, the elegant historian of America, has deservedly described it "as the most salutary simple, and of, perhaps, the most restorative virtue, that Providence, in compassion to human infirmities, has made known to man."

All the preparations of Bark are contra-indicated in inflammatory diseases, and in all disorders complicated with an inflammatory condition of the alimentary canal.

The facility with which small doses of sulphate of quinine can be taken has led to the substitution of this preparation for that of the Bark in powder, which is objectionable on account of its nauseous taste, bulk, and from the woody fibre and inert matter contained in it rendering it indigestible and oppressive to the stomach. The ordinary dose of the powder is half a drachm, three times a day, mixed with wine and water; but in urgent cases, it may be taken to the extent of one or two ounces in the course of twenty-four hours. The dose of the sulphate of quinine is from one to six grains, three times a day; in the malignant intermittent fever so common in Italy, and, in some countries within the tropics, twelve or fifteen grains are required as a dose. In general, Europeans, who have resided long in warm climates, cannot bear large doses of quinine; two grains are usually found sufficient. In many cases, we have known larger doses to cause buzzing, ringing, and other noises in the ears, giddiness, deafness, confusion of ideas, and other symptoms of cerebral excitement; and even grain doses administered during convalescence from fever, dysentery, and other acute diseases, sometimes produce this affection of the head. The brain is more especially excited by this remedy, even in small doses, when administered as a tonic in chronic dysentery. Quinine, from its excessively bitter taste, is usually given in the form of pill, made up with a little crumb of bread or mucilage. It is also frequently given in a liquid form; but, as it is not very soluble in water, a little spirit, or a few drops of the *elixir of vitriol*, (*aromatic sulphuric acid*) are generally added to increase its solubility.

The *cold infusion* of *Bark* is a useful tonic in indigestion, and is in many cases more grateful to the stomach than quinine; it is prepared in the following manner: Take of Peruvian Bark, bruised, an ounce, boiling water a pint; macerate for six hours in a vessel lightly covered, and strain: a wineglassful to be taken as a dose three or four times a day.

The *tincture* of *Bark* is sometimes taken as a stomachic in the dose of two or three teaspoonfuls. Many people, residing in districts where they are constantly exposed to the influence of

malaria from decaying vegetable matter, take this tincture habitually with the intention of keeping off fever.

PILES.

Piles are small painful tumours, situated at the extremity of the great gut called the *rectum*, (see page 382,) either within the anus or fundament, or around its margin. In popular language, these swellings, when situated within the gut, are termed *internal Piles*; when beyond the verge of the anus, *external Piles*; and when there is no discharge of blood they are usually called *blind Piles*.

There are two kinds of Piles, differing from each other in structure. The *first kind* is formed by dilatation of the veins of the anus; in those which are external, the veins are covered by thick indurated cellular substance, and the skin surrounding the verge of the anus; the internal are also covered with dense cellular tissue, and by the mucous or lining membrane of the gut. In the *second kind*, the Piles are soft, spongy, and not composed of enlarged veins, but of numerous minute vessels interwoven with each other. When irritated, they increase in size, become hard, and blood is exuded from innumerable points on their surface; whereas, in the first kind, the haemorrhage takes place from the bursting of a vein, and the blood flows in a stream. Some authors describe other varieties of Piles; but they appear to be only modifications of the kinds above described.

Piles differ much in colour, form, and size; they generally have a broad base; sometimes they have narrow necks: their size varies from that of a pea to the bulk of a pullet's egg, but they are for the most part about the size of the end of the finger or thumb. The first kind, when irritated, or inflamed and charged with blood, are of a bluish or purple colour; when in an indolent state, they are less dark, and flaccid, resembling the empty skin of a grape. The second kind, under the same circumstances, are red, or slightly livid, circumscribed, and distinct from the surrounding surface.

Internal Piles occasionally descend beyond the sphincter muscle of the anus, and appear externally covered with mucous membrane; several of them generally protrude together, having

broad bases running into one another, or appear of a conical form, and larger than their necks. When large, they protrude every time the patient visits the water-closet, and this is sometimes attended with considerable pain; they may return of themselves, or require to be pushed up beyond the sphincter. Sometimes they become a source of great annoyance by descending when the patient is walking, and thus almost entirely prevent him from taking exercise. Two, three, or more internal Piles may be protruded during several days, and cause considerable pain, and a profuse discharge of mucus; then gradually diminish in size, and recede of themselves.

Blind Piles, or those which give out only a small quantity of blood occasionally, are of little importance; but remedial measures are necessary when they protrude, become strangulated, and cause acute pain; when they become inflamed; or, when they bleed to such an extent as to injure the patient's health. The quantity of blood discharged is sometimes enormous; many cases are on record where several pounds have been lost at one time: in this manner, Arius, and the celebrated astronomer Copernicus, bled to death.

The following correct description of the symptoms of this complaint, by Sir Benjamin Brodie, is so simple and distinct, that it may be easily understood by all classes of readers: "At first, while the tumours are small, the patient complains of a sense of heat and itching about the anus; and, every now and then, when he is costive, the external Piles become a little swollen and tender. The internal Piles become swollen also, so as to fill up the cavity of the gut, thus exciting a sensation as though a stick, or some other foreign body, were lodged in it. The external Piles sometimes inflame, swell, and become tender, so that the patient can scarcely bear them to be touched, and cannot walk without difficulty. They may continue thus inflamed for some considerable time, and then the inflammation may subside; the Piles generally, but not always, returning to the condition in which they were before the attack of inflammation came on.

" Sometimes an abscess forms in one of these external Piles, and bursts externally. The abscess may be troublesome to heal; but, when it is healed, it is found that the cavity of the vein is

obliterated, and that it is, in fact, cured. Such an abscess is essentially different from a fistula in ano. Sometimes, when an external Pile is inflamed, the blood in it becomes coagulated, and it is then hard to the touch. If, under these circumstances, you slit open the Pile with a lancet, there comes out a mass of hard coagulum, perhaps as large as a pea or a horse-bean : the cavity inflames, suppurates, and granulates. The same thing happens as though suppuration had taken place in the first instance, and the Pile is obliterated. But, if you do not slit open the Pile, and leave the disease to take its own course, the cavity being blocked up by the coagulum, the vein becomes obliterated, after which the coagulum is gradually absorbed, and the Pile is cured ; that which was a Pile before being now converted into a flap of skin. Sometimes, when a Pile is thus distended with coagulated blood, the skin becomes so much attenuated, that it gives way in some one point, and the blood being gradually squeezed out, suppuration probably takes place ; and the case proceeds just the same as if you had opened the Pile with a lancet." The observations, however, in the last paragraph are only applicable to the first kind of Piles. The large loose flaps of skin, at the margin of the anus, caused by the frequent distension and collapse of the Piles, diminish gradually, or, at all events, give no trouble, after the veins have been obliterated in any of the modes above described.

CAUSES. The causes which induce Piles are numerous. The principal of the *predisposing causes* are, a plethoric habit of body, a melancholic, bilious temperament, hereditary disposition, hot and variable climates. Piles are seldom met with before puberty, and women are most frequently affected with them after *the turn of life*. The majority of the European inhabitants of tropical climates are more or less affected with this disorder ; and few persons with liver complaints are free from it. Sedentary occupations and indolent habits, conjoined with full generous diet and the habitual use of wine, malt liquor, spirits, &c., induce a state of general plethora, and more especially fulness of the blood vessels of the abdomen ; in such cases, the discharge of blood from Piles is merely a salutary effort of nature to relieve the system, and is to be considered as one of the means which nature makes use of to maintain the balance of the various functions of

the animal economy, which numerous circumstances, even during the most satisfactory state of health, tend constantly to disturb. In fact, if the patient has no intention of changing his manner of living, the discharge will be of service to him, and may be the means of warding off disorders of a more serious nature. If he suffer severely, now and again, for a few days, he will still have reason to congratulate himself that his luxurious habits have not brought on gout, or some other disease of a more formidable character. Free living and inactive habits cause both gout and Piles to be very prevalent diseases among the more wealthy classes of society, whereas the opposite circumstances render them of rare occurrence among the poor engaged in active employments, because their aliment is not in greater abundance than the wants of the system require. Piles, in fact, may be considered as the least serious consequence of that system of over-indulgence at table to which so many people are addicted; and are, in general, advantageous rather than otherwise, inasmuch as they serve to give vent to the blood with which the system is overloaded. In such cases, this fluid is not only in excess, but at the same time overcharged with nutritive and excrementitious matter, constituting a plethoric state of the system, which frequently gives rise to apoplexy, inflammatory disorders of every description, haemorrhages, and other diseases, which not only endanger life, but often render it miserable; and perhaps contributes more to the destruction of mankind than any other cause whatever.

The chief *occasional causes* are, constipation of the bowels, which is by far the most frequent, pregnancy, large or too often repeated doses of purgative medicine, more especially of Morrison's pills, which are principally composed of gamboge and aloes, and other empiric remedies containing the latter substance, which possesses a specific action in exciting the lower bowel, and consequently aggravating and even inducing Piles. This disease is also brought on by long sitting; hence it is common among Turks and the inhabitants of eastern countries, tailors, shoemakers, &c.; by sitting on the damp ground, wearing tight stays, and various causes which tend to obstruct the circulation of blood in the abdomen, and irritate the lower part of the rectum.

TREATMENT. An acute attack of Piles is attended with much

suffering; the patient cannot sleep, is exceedingly restless, and can scarcely sit down a moment without experiencing the most acute pain; the Piles are inflamed and gorged with blood, the sphincter muscle of the anus is spasmodically contracted, the evacuation of the faeces is accompanied with exquisite pain, and the slightest pressure on the parts cannot be tolerated.

The first step to be taken to relieve the patient from this distressing state, is to apply twelve or fifteen *leeches* round the anus, and, as soon as they have fallen off, he should sit over the steam of warm water, or *decoction of poppy heads*, during at least half an hour; this is to be repeated every two hours, and immediately followed each time by the application of a warm bread and milk, or linseed poultice. A smart dose of *castor oil*, with a drachm and a half of the *tincture of henbane*, should be taken as a dose, or a teaspoonful of the following electuary may be taken every three hours, until the bowels be freely opened :

No. 263.

Take electuary of senna, (lenitive electuary) an ounce,
Flour of sulphur, the same quantity,
Jalap, in powder, a drachm,
Balsam of copaiva, half an ounce,
Ginger, in powder, half a drachm,
Cream of tartar, half an ounce,
Syrup of ginger, a sufficient quantity to form the whole into an electuary.

If the stupefying and warm poultices do not relieve the pain in the course of a few hours, the same number of leeches are to be again applied. This treatment is very efficacious, and soon gives great relief. When the acute stage is past, the following lotion should be repeatedly applied to the anus during the day :

No. 264.

Goulard water, six ounces.
Laudanum, an ounce. Mix.

A teaspoonful of the electuary, according to the above formula, should be taken at bed-time, and the dose may be repeated the following morning, if necessary, in order to keep the bowels open.

Piles, at first, give very little trouble, and seldom protrude, unless the bowels have been neglected, or the person has been indulging more than usual at table; under such circumstances,

they become slightly painful, with a sensation of heat and itching at the anus. These symptoms may be soon relieved by attention to diet and regimen, and regulating the bowels by suitable doses of the above electuary, or of that directed at page 127. A laxative in common use in such cases is composed of equal parts of cream of tartar and sulphur, made into an electuary with syrup or treacle; the ordinary dose of this is a large teaspoonful at bed-time. The patient should get into the habit of passing his motions at night, just before going to bed: this is an important part of the treatment, and ought never to be neglected.

Other means, besides the above, may be employed with advantage to remove Piles which have arisen from occasional or accidental causes. Sir B. Brodie, and several of the best French authors, recommend a *lavement* of half a pint of cold water every morning after breakfast. The following astringent ointment is very generally used, but perhaps the best local application is a saturated solution of *alum*.

No. 265.

Powder of oak galls, an ounce,

Elder ointment, or hog's lard, the same quantity. Mix.

The Piles and anus are to be anointed with this night and morning.

The bidet should be used after each evacuation from the bowels, and Mr. Mayo suggests that the parts should be washed with yellow soap and water. In some cases, Ward's paste, (see Appendix) or the *confection of black pepper* of the pharmacopoeia, is very serviceable; about the size of a nutmeg is to be taken as a dose three times a day. This remedy is contra-indicated when the Piles are inflamed; Dr. Paris states that it is principally useful in those cases attended with considerable debility, in phlegmatic habits, and when Piles arise from a deficient secretion of the rectum. A great variety of remedies have been proposed; but in all cases where Piles are purely accidental, and depending solely on the influence of causes which act only on the part affected, they will generally disappear gradually of their own accord, by attending to diet and regimen, and avoiding the causes through which they have been produced.

When Piles come on spontaneously, and have become constitutional, giving out blood periodically, they are in a manner neces-

sary, and act as a safety-valve for the relief of the overloaded circulation, and thus serve, in a great measure, to protect the system from gout, internal haemorrhage, apoplexy, and other dangerous diseases. Hence, it is obvious that in many cases it would be dangerous to interfere with bleeding Piles; more especially when the habits of the individual are such as to render an outlet of this description necessary.

When the discharge is too profuse, or continues too long, it must be restrained by remedies suited to the circumstances of the case. If the patient be robust and plethoric, blood should be drawn from the arm, low diet should be strictly enjoined, and a drachm or two of *nitre*, with a grain of *tartar emetic*, may be taken in the course of the day. But, where the patient is much debilitated, the discharge may often be arrested by the *spirit of turpentine*, a drachm of which is to be taken, mixed with sugar and water, or with the yolk of an egg, three times a day. The ergot of rye, which in many cases has been found of great service in checking bleeding from the womb, is here of no use whatever. The best remedy in extreme cases is the *sugar or acetate of lead*, combined with morphine or opium. See page 459.

Piles frequently become so troublesome, that the patient is desirous of getting rid of them at all hazards. There are two methods of removing Piles; the one is by *excision*, the other by *ligature*; the former is always preferable when the Piles are external, the latter when they are internal: both operations are exceedingly simple. According to Sir Astley Cooper, the manner of applying the ligature is, "to draw down the Pile with a forceps or tenaculum, and tie a piece of waxed silk around it; draw the knot until the patient complains severely; then tie a second, cut off the ligature a little way from the knot, and return the intestine and Pile." On the continent of Europe, and more particularly in France, many of the best surgeons prefer cutting off the tumour immediately under the ligature. After the operation, the patient should confine himself to low diet, and drink freely of barley water, or linseed tea with nitre. If he experience pain, half a grain of the *acetate of morphine*, or fifteen drops of the solution directed at page 467, may be taken, and relief will be derived from stupefying the parts as already recommended.

PLEURISY.

The *pleura* is a thin membrane, of strong texture, which lines the whole of the inner surface of the chest, and completely covers the lungs; a fold of it from each side passes directly across from the spine to the breast bone, forming two cavities, which have no communication with each other. This portion of the membrane is called the *mediastinum*, from being situated in the middle of the chest. But the two *laminæ*, or folds, which form this partition, do not every where adhere to each other; for, at the lower part of the chest, they are separated by the heart, which is situated between them; and, at the upper part, they enclose an organ called the *thymus gland*, the use of which has not yet been ascertained. The whole extent of the pleura, whether lining the inside of the chest, or investing the lungs, is constantly lubricated with a serous moisture which exhales from its surface, rendering it smooth and polished, and thus facilitates the movements of the chest, and prevents the opposite surfaces, though always in contact, from growing together.

Pleurisy is the term applied to inflammation of the pleura, a painful disease of very frequent occurrence, though rarely fatal, when not complicated with other diseases. At the commencement of this disorder, the blood vessels immediately under the inflamed portion of the pleura become distended with blood, and form a kind of net-work of a bright red colour. The natural secretion from the affected part is at first supposed to be considerably diminished; but an overflow of thin serous liquid soon takes place, and, if the inflammation increase, the fibrinous part of the blood which, in a state of health, nourishes and sustains the pleura, is also thrown out, and forms in solid films or layers upon its surface, or is mingled with the effused liquid which has accumulated in the side of the chest affected. This excessive secretion sometimes continues until the side in which the inflammation is seated becomes completely filled with liquid, and the lung is in consequence so compressed, that it ceases to perform its function. Here we observe the great advantage which results from the chest being divided into two cavities by the mediastinum; this membranous partition confines the liquid to the side affected, and thus, though one lung be compressed

and unable to act, the other is prevented from being disturbed and continues to perform its office as usual. The inflammation, however, may attack both sides of the pleura, (double Pleurisy); but this is comparatively a rare occurrence, and is nearly always dependent on tubercles in the lungs, or the incipient stage of consumption; sometimes it occurs unconnected with any other disease, and may then be fatal.

Pleurisy commences with a slight degree of chilliness, sometimes with severe rigors or shivering. The patient, either at the same time or shortly after, complains of an acute cutting pain (*stitch*) below the nipple, or towards the anterior edge of the arm-pit, which occasionally catches or interrupts the breathing. The ordinary series of feverish symptoms soon follow, viz., hot, dry, and harsh skin, thirst, high coloured urine, and a firm, hard pulse. But, though this is the usual character of the pulse when a serous membrane is inflamed, cases, nevertheless, frequently occur where it is small, soft, sometimes unequal or intermittent, and closely resembling that which results from great debility; while the patient is at the same time labouring under much oppression and tightness at chest, accompanied by distressing anxiety. Now, if this oppressed state of the system were mistaken for real debility, and stimulants administered, all the symptoms would be aggravated, and serious consequences might accrue. But these symptoms, instead of being the result of direct debility, indicate the violence of the inflammation; the acute pain prevents the patient from breathing freely, and the constantly impeded respiration causes obstruction in the lungs; part of the blood, therefore, only reaches the heart, and consequently the quantity in general circulation is greatly diminished. A similar state of the pulse, and other symptoms of oppression, sometimes occur in inflammation of the lungs, generally about the third or fourth day of the disease, or at the commencement of the second stage, (see page 432,) and are also caused by the blood being obstructed in the lungs. Every time the patient coughs, or attempts to draw in a full breath, the pulse becomes suddenly full and hard; and if venesection be resorted to, it may be observed to rise gradually as the blood flows from the arm, and the inflammatory symptoms soon declare themselves in a manner not to be mistaken. We have deemed it necessary to

notice particularly this modification of the pulse, because it might mislead those who have not received a medical education, and cause them to neglect depletion and the active measures necessary in such cases.

Cough is a symptom which is always present in every inflammatory affection of the lungs; in ordinary cases, it is brought on each time the patient endeavours to take a deep inspiration, and, when the inflammation is severe, is induced by speaking, or even by moving the chest. In Pleurisy, the cough is short, dry, and very painful; and the expectoration is scanty, a little whitish, or transparent.

The patient generally lies on the back; but, at the early stage of the disease, sometimes on the sound side. In the chronic form, the patient lies on the back, or more frequently on the side affected, because the weight of the liquid would impede the motion of the healthy lung, if the patient lay upon that side.

In mild cases, or when active treatment has been adopted at the commencement, and only a small quantity of liquid is effused into the chest, recovery takes place in a few days; but when the accumulation of liquid is considerable, the disease may continue from one to three months.

The following signs indicate the presence of liquid; by striking the side of the chest in which the liquid is lodged with the ends of the fingers, the sound elicited will be dull, flat, and very different from the clear resonance of the opposite side; and if the ear be applied to the same side, no sound of respiration will be heard, whereas, at the sound side, the peculiar murmuring noise caused by the air passing through the lungs can be distinctly heard. When the liquid is thrown out from the pleura, it follows the ordinary laws of gravity, and falls to the most dependent parts, and there the sound, when the patient is in a sitting posture, will be dull and flat, while the upper part of the chest affords the usual clear healthy sound. We are thus enabled to form a tolerably correct idea of the extent of the effusion, and can tell whether the liquid be increasing or diminishing in quantity.

At the commencement of the disease, the form of the chest is not perceptibly changed; but a considerable alteration may be observed when there is much accumulation of liquid. The

side affected is first dilated at its posterior and lower parts, the spaces between the ribs being more prominent than in the healthy state. As the effusion increases, the spaces between the ribs in front gradually protrude; and if the chest be measured immediately under the nipples, the affected side will be found enlarged from one to three inches, while the shoulder is raised, and the nipple higher than on the sound side. The general dilatation of one side of the chest is peculiar to pleurisy, and, when accompanied with pain, serves to distinguish this from all other diseases. When the effusion is considerable, the motion of the chest is chiefly performed by the healthy side, while the other remains almost passive; this is owing to the air being prevented from entering the lung, which is compressed against the spine by the liquid. The prominence of the chest continues a considerable length of time after the disease has come to a crisis; at length the liquid begins to be absorbed, and as it diminishes in quantity, the ribs gradually approach each other and fall in, until the affected side is much more flattened than the sound one, while, at the same time, the shoulder which was preternaturally raised, sinks in the same gradual manner below the level of the other; and this flattened state of the chest and depression of the shoulder may continue throughout life, without affecting the general health, or putting the patient to much inconvenience. After the liquid is entirely absorbed, the lung, from having been so long compressed, is unable to recover itself, and can only expand to a limited extent, or not at all; the chest is consequently flattened from the pressure of the atmosphere; or the lung may be firmly bound down in consequence of adhesions having formed between the opposite layers of fibrinous matter, which we already noticed as being deposited on the surface of the pleura during the inflammatory stage of the disease. Much deformity of the chest, however, does not take place, unless the accumulation of liquid has been very considerable.

There is a form of Pleurisy frequently met with, which is at first attended with pain and slight feverish symptoms, but afterwards slight cough, difficulty of breathing, and an uneasy sensation at the chest, are the only symptoms experienced by the patient. In some cases, no pain is felt at any period of the disease, and the cough, difficulty of breathing, &c., are so slight

as scarcely, or not at all, to be observed; this latent species of the disease comes on sometimes during convalescence from fever, and there is often a considerable accumulation of liquid before any affection of the chest is suspected. Many people who are supposed to die from old age, perish from this latent form of Pleurisy.

When Pleurisy declares itself in the usual way, and active treatment is adopted at the commencement, recovery generally takes place; but when the subjects of the disease are children, or people far advanced in life, it often proves fatal.

Pleurisy usually arises from cold and wet; but it may be brought on by any of the causes which give rise to inflammation of the lungs. (*See page 434.*)

TREATMENT. The treatment of Pleurisy is based on the rules which apply to all acute inflammatory diseases. The most effectual remedy is *blood-letting*, and this measure is the more beneficial the sooner it is employed after the commencement of the disease. The blood is to be allowed to flow from the arm until the approach of fainting, and, after the lapse of six or eight hours, from twenty to forty *leeches* are to be applied over the seat of the pain. By employing these energetic means at an early period, the patient is enabled to draw in a full breath without suffering pain, the pulse becomes soft, the feverish symptoms abate, and thus, in many cases, we succeed in completely arresting the progress of the disease at its very onset. When the tissue or substance of an organ is inflamed, we repeat the general bleeding as often as it may be found necessary; but when the inflammation is seated in the membranes, whether enveloping organs, or lining the great cavities of the body, it is found more advantageous to repeat the local bleeding, by means of cupping or leeches, than to have again recourse to venesection. Hence, in Pleurisy, if the pain, cough, and difficulty of breathing return, local depletion is to be resorted to a second time; and this measure is to be employed as often as the urgency of the case may require, until the inflammatory action cease. The bowels are to be freely opened after the first bleeding by a dose of *calomel*, (six or eight grains) combined with a quarter of a grain of *tartar emetic*, or six grains of *James's powder*, followed by a draught of the infusion of *senna leaves*, with *Rochelle* or *Epsom*

salts, (black draught, see page 32.) The *tartar emetic mixture*, (page 76, No. 55,) is of great service in keeping under the inflammatory action; but it cannot be given to the same extent as in inflammation of the lungs; in general, a tablespoonful every two or three hours will be found sufficient to keep up its depressing action on the system; but the strength of the doses, and the frequency of their repetition, must depend on the severity of the disease, the age and constitution of the patient, and various other circumstances. A slight degree of sickness at stomach (nausea) is a sure indication that the remedy has been carried to the proper extent; if the dose were to be increased after this symptom is induced, the consequence would be vomiting, which could be of no service, and might do harm. If the disease have been neglected during the first two or three days, venesection is to be avoided; but local bleeding, and the *tartar emetic mixture*, should be employed until the pain and inflammatory symptoms abate. On the third or fourth day from the commencement of the disease, a large *blister* is to be applied over the side; tissue or silk paper, moistened with oil, being placed between it and the skin, and kept on during forty-eight hours; but if the tissue paper be not interposed, the blister should be removed at the expiration of six or eight hours, and a large poultice applied over the part.

As a general principle, narcotic remedies are not admissible in Pleurisy; but cases sometimes occur in which, after free depletion, the pain and irritability continue so urgent, that we are obliged to have recourse to this class of remedies. Opium is always a hazardous medicine in inflammation, unless in small doses combined with calomel, or in cases where blood-letting has been carried so far as to induce a state of great exhaustion, and then it may be given with advantage to the extent of two or three grains; but the *extract of henbane*, in a dose of five or six grains, or half a grain of the *acetate of morphine*, will in general have the effect of soothing the pain, and allowing the patient to sleep.

Pleurisy is sometimes checked, when met by vigorous treatment, at the commencement; but, in the great majority of cases, even if the patient be bled to fainting, the feverish symptoms, though relieved for a time, soon return: we then know that the inflammation is advancing, and in spite of the most active treat-

ment, it goes on from five to nine days. But, though we cannot prevent the inflammation, when once confirmed, from running a certain course, we nevertheless have it greatly in our power to moderate the symptoms, until the disease come to a crisis, and then, in ordinary cases, no further remedial means are required. There is still, it is true, an accumulation of fluid in the chest, but the process of absorption, by which this is carried off, may be safely left to nature, if the patient have sufficient self-command to live very sparingly; yet, though nothing is more efficacious than the *cura famis* at this stage of the disorder, few persons are able to resist the keen appetite which accompanies convalescence; and intemperance in diet is almost sure to retard the absorption of the fluid, or induce a relapse. The desire for food is sometimes so urgent, that, in order to blunt the appetite, we have been several times under the necessity of giving the tartar emetic mixture in small doses, so as to keep the stomach slightly under its influence.

If the absorption of the fluid secreted into the chest go on very slowly, it will be adviseable to apply *blisters* repeatedly over the affected side, or the *tartar emetic ointment*, (page 26,) may be used, so as to keep up constantly a copious eruption of pustules, until the cure is completed. Instead of these means, the French frequently encase the whole of the side, from the breast bone to the spine, with a *Burgundy-pitch plaster*, and this application is often of considerable service. Internally, the subjoined pills, or mixture, may be given to assist in the removal of the fluid.

No. 266.

Calomel, twenty-four grains,
Squills, in powder, twelve grains,

Foxglove, in powder, three grains. To be formed into twelve pills, with a little syrup or mucilage. One or two to be taken daily, until the mouth become slightly affected.

No. 267.

Tincture of aloes, from one to two drachms,
Tincture of foxglove (*digitalis*) twenty drops,
Tincture of squills, twenty drops. Mix with a little water. To be given an hour before breakfast, every second or third morning, according to the effect which it produces.

The *iodide or hydriodate of potash* is at present much used for the purpose of promoting absorption, and may be given as follows.

No. 268.

Iodide of potash, thirty-two grains,
Water, eight ounces. Mix. A tablespoonful to be taken as a dose four times a day.

Dr. Williams states, that by taking the simple precaution of eating a bit of bread or biscuit after each dose of this mixture, the irritation of stomach and nervous symptoms commonly ascribed to iodine are prevented.

Sometimes all our remedies produce no effect in promoting absorption, the powers of the system fail to remove the effused fluid, the patient becomes pale, emaciated, and at length hectic symptoms supervene. In such cases the effusion generally consists of the serous liquid above-mentioned, mixed with matter, sometimes with blood, or is composed entirely of matter, as often happens in scrofulous habits. Under the above circumstances, the aid of the surgeon is required to evacuate the matter, but this operation, though easily performed, and attended with little pain, is only sometimes successful.

POTASH.

The bi-carbonate, or, as it is commonly called, carbonate of Potash, is sometimes used in indigestion, to correct acidity, to prevent the formation of lithic acid or red gravel, and for the latter purpose it is frequently employed in gout, which, as we have already had occasion to mention, is frequently complicated with the formation of red gravel. When it is found necessary to administer effervescing draughts to relieve irritability of stomach, many practitioners prefer this salt to soda. The effervescing draught, in common use, is made by dissolving a scruple of the bi-carbonate of Potash in water, and then adding fifteen grains of citric acid, or the same quantity of tartaric acid, or three drachms and a half of lemon juice. The dose of the bi-carbonate of Potash is from ten to thirty grains three times a day.

PRUSSIC ACID.

Prussic, or Hydrocyanic Acid, was discovered by Scheele, in 1782; it exists in several plants, as the cherry laurel, bitter almond, and peach; but, for medicinal purposes, it is prepared from the cyanuret of mercury. This acid, in its concentrated state, is the most powerful and rapid poison known. When prepared for internal use, it is given in the dose of from three to ten drops, three times a day, in sugar and water, and has been found very useful as a sedative, in asthma, hooping cough, chronic bronchitis, and at the commencement of consumption. Dr. Elliotson has employed it with great success in some forms of indigestion. Dr. Macleod has found Prussic Acid useful in allaying nervous palpitations, more especially when caused by a disordered state of the digestive organs; he has given it to the extent of twenty-eight drops in twenty-four hours, and has never seen any accident result from its use. In running tetter and some other diseases of the skin, accompanied with severe itching, the following lotion is said to be useful.

No. 269.

Prussic acid, two drachms,
Acetate or sugar of lead, sixteen grains,
Alcohol, half an ounce,
Distilled water, eight ounces. Mix.

PUERPERAL OR CHILD-BED FEVER.

This is the name given to a very dangerous inflammatory disease, to which women are liable shortly after delivery. There are two forms of Puerperal Fever; the first is purely inflammatory, the second is accompanied with typhoid symptoms. In both varieties the inflammation is seated in the peritoneum, or serous membrane which lines the cavity of the abdomen, and envelops the various organs contained in it: the whole or only part of this membrane may be affected, and sometimes the substance of the womb and its appendages are inflamed.

The first variety commences with general shivering, or merely a sensation of chilliness in the back and loins; in either case the

feeling of cold is soon followed by heat of surface; full hard pulse, sometimes not quicker than natural, but generally varying from a hundred to a hundred and ten beats in the minute; head-ache, great restlessness, and other symptoms of general excitement, attended by pain and swelling of the whole or part of the abdomen, according to the extent or progress of the disease. The inflammation generally commences in the peritoneal membrane covering the womb; hence the pain or tenderness, and swelling, are first manifested at the lower part of the belly, and afterwards extend throughout the whole abdomen, which frequently becomes so tense and tender, that even the pressure of the bed-clothes is insupportable. The discharge called the *lochia*, or, in popular language, the cleansings, which always follows delivery, is commonly checked, but sometimes it continues to flow as usual. The breasts become flaccid, and if the milk have begun to flow, it is dried up, but the disease generally commences before this secretion is established. The patient lies on her back, with the knees raised upwards towards the belly; this position being found the least painful, inasmuch as it slightly relaxes the inflamed peritoneum.

This alarming disease generally makes its attack about the third day after delivery, sometimes on the first, and often not until the sixth day, or even later. It is always the more dangerous the earlier it commences. The duration is various; by energetic treatment it may be subdued in the course of a few days, the pain and swelling subside, the appearance of anxiety and distress so strongly depicted in the countenance gradually wears off, and the woman quickly recovers; or it may be prolonged from eight to fifteen days, and then terminate favourably, or pass into a chronic state, from which the patient very seldom recovers. In many cases the symptoms progress with frightful rapidity, the belly becomes enormously distended, the inflammation extends to the peritoneal covering of the stomach, vomiting supervenes, and the patient dies delirious and in great agony. It occasionally happens, after a longer or shorter period of severe suffering, that the pain subsides, and the patient becomes perfectly quiet and composed. The friends who have been anxiously watching the progress of the disease are now flattered with the

hope of recovery, but the experienced practitioner knows well that this deceitful calm indicates the near approach of death.

In the *second*, or *typhoid variety*, the shivering is severe and long continued; the head-ache is intense, and accompanied, even from an early period, with constant low delirium, which is, in most cases, preceded for a short time by drowsiness and listlessness; the latter symptom is shown more particularly by the patient becoming careless about her child. The pulse is small, hard, and exceedingly quick, being from 130 to 160 in a minute; the higher it is, the greater is the danger. The skin is hot and dry, whereas, in the former variety, it is generally moist; the face is pale and contracted, there is great prostration of strength, and frequently vomiting and purging. The discharge from the genital organs (*lochia*) becomes dark-coloured and acquires a fetid smell, or is entirely suppressed; and though the abdomen is greatly distended, the pain is often dull, and sometimes scarcely felt, unless when pressure is applied. Towards the termination of the disease the difficulty or hurry of breathing increases, the pulse is exceedingly quick and fluttering, there is starting of the tendons, the urine and faeces are passed involuntarily, the mouth and tongue are foul, the body and limbs are bedewed with cold sweats, the extremities become cold, and the patient sinks.

CAUSES. Child-bed Fever may be caused by violence during delivery, exposure to cold, premature exertion, agitation of mind, errors in diet, or the imprudent use of stimulants, and it sometimes prevails as an epidemic; but whether this depends on a peculiar state of the atmosphere, or on a specific contagion, is a point not yet determined. The best of the French authors state their disbelief in its ever being propagated by contagion, and bring forward strong evidence in favour of this doctrine; but in Great Britain an opposite opinion prevails, and is supported by facts not less strong; for example, Dr. Armstrong mentions that out of forty-three cases of the disease at Sunderland, forty occurred in the practice of one surgeon and his assistant; and Dr. Gordon, in a treatise on an epidemic Puerperal Fever, which raged at Aberdeen, says, "I had abundant proof that every person who had been with a patient in the Puerperal Fever became charged with an atmosphere of infection, which was

communicated to every pregnant woman who happened to come within its sphere." Dr. Blundell makes the following observation, "I don't say it always comes from infection; but I would rather a friend or relation of mine was delivered in a stable, without any assistance, than she should be attended by a practitioner who had just attended a puerperal patient. I don't say it is always contagious, but when it exists in a district it becomes so." As long, therefore, as this important point remains undecided, it is always advisable to act as if the disease were contagious.

TREATMENT. It is supposed that half the women who die in child-bed fall victims to Puerperal Fever; but the mortality would not be nearly so great if medical aid were procured at an early period of the disease; for it is only within the first twenty-four hours that much confidence can be placed in remedies. It cannot, therefore, be too strongly impressed upon the minds of the friends and attendants of child-bed women, that assistance should be sought at the very onset of this formidable malady, for, from the moment the first symptoms are manifested, the woman's life is in peril, and this will be increased by every hour's delay. The few instructions we have to offer with regard to the treatment are of course intended for the guidance of those who are placed in circumstances where medical assistance cannot be obtained, and where the friends of the patient must either act with promptitude and decision, or leave her to almost certain death.

When the pulse is full and hard, the face flushed, and the skin hot, the remedy which naturally suggests itself is free and repeated bleeding. No rule can be given with regard to the precise quantity of blood to be withdrawn: this must depend upon the extent and severity of the inflammation, the age and strength of the patient, the stage of the disease, and other circumstances connected with the case. The safest and most efficacious plan of bleeding in this, as in all other acute inflammatory diseases, is to place the patient in the erect position, and allow the blood to flow until the approach of fainting; and in the event of this accident happening, there is no danger to be apprehended, the patient will soon recover when placed in the recumbent position with her head low. In the course of four or five hours, if the feverish symptoms and pain return, from fifteen

to thirty leeches are to be applied over the abdomen, and after they have fallen off, the bleeding from their bites is to be promoted by the application of warm poultices, or fomentations of chamomile flowers, (see page 142.) It may be necessary to repeat the leeching two or three times within the first twenty-four hours, in the event of the continuance or recurrence of the pain and other symptoms of inflammation. Indeed, it must ever be borne in mind, in treating this disease, that more harm is likely to accrue from not bleeding sufficiently, than from carrying depleting measures too far. If it be found necessary to stop the oozing of blood from the leech-bites, they should be touched with a bit of lunar caustic, or a little powdered alum, or tincture of steel may be applied: this ought to be particularly attended to when only two or three of the leech-bites continue to give out blood, an occurrence which keeps the patient in an uncomfortable state without being attended with any advantage.

If at the expiration of twenty-four hours, the pulse be as low as 115 in the minute, and the patient feel considerably relieved, a favourable result may be anticipated; and there will be no necessity for repeating the bleeding, unless there should be pain or tenderness when pressure is applied over the abdomen, and then twelve or fourteen leeches should be employed; but if at that period the symptoms should not be in some degree subdued, and if the pulse be at 140 or upwards, the patient is not likely to recover:

Immediately after the first bleeding the following mixture should be administered, so as to keep up a slight degree of nausea, until the inflammation is subdued.

No. 270.

Tartar emetic, six grains,
Tincture of henbane, three drachms,
Water, six ounces,
Simple syrup, or syrup of orange peel, two drachms. Mix. A tablespoonful to be given every hour.

The first dose of this mixture, in many cases, produces vomiting, and the second has frequently the same effect, but in a slighter degree; the subsequent doses only excite slight nausea. This remedy, like bleeding, is borne to a much greater extent

in the first variety of the disease than in the second; in both it produces a directly sedative or lowering action on the whole system; and when carefully administered, according to the circumstances of the case, possesses great power in maintaining the effect produced by the first bleeding, and often prevents the necessity of further depletion. In the second or typhoid variety, the application of thirty or forty leeches to the abdomen, conjoined with the judicious use of this mixture, often arrests the progress of the disease in a prompt and decisive manner. It must not however be forgotten, that all internal remedies are to be considered only as secondary to general and local bleeding.

The circumstances which indicate that the bleeding and antimonial mixture have exercised a salutary influence on the inflamed parts are, the subsidence of the pain, tenderness, and heat of the abdomen, and the diminution of the swelling. A large blister may now be applied, or tartar emetic ointment, (see page 26,) may be rubbed in over the abdomen; but counter-irritation must never be resorted to while the inflammatory symptoms continue high.

If enemata of warm water, linseed tea, or decoction of marshmallows, have not the effect of opening the bowels, *castor-oil* will be found the best purgative. When the disease is accompanied with purging, an enema, composed of two ounces of thin starch, with twenty or thirty drops of laudanum, should be administered every two or three hours, until it is checked.

When the tongue is parched, and of a florid, red, or brown colour, with urgent thirst, and severe irritation of stomach, the tartar-emetic mixture is contra-indicated. In such cases the usual routine of practice is to give calomel and opium, until the mouth be slightly affected or the inflammation subdued.

No. 271.

Calomel, ten grains,

Opium, a grain and a half; to be formed into three pills, with a little mucilage or crumb of bread, and given as a dose every three or four hours; or the same quantity of *calomel*, combined with five grains of *James's powder*, or ten grains of *Dover's powder*, may be given in a little jelly.

In the low typhoid, or malignant form of the disease, which, according to some of the best authors, is caused by inflammation

of the veins of the womb, and the consequent absorption of matter (pus) into the system, calomel and opium are also recommended. Dr. Blundell states, that when the disease appears as an epidemic it is very often malignant, being marked; he says, "by the rise of the pulse, inflation of the abdomen, pain and tenderness diffused over the whole surface of the abdomen; sudden sinking of the strength, and by other cases occurring in the district; and in this form of the disease, do what you will, the woman dies."

The violent character of Child-bed Fever, the rapidity of its progress, and the little control which the physician has over it, show the great importance of adopting measures to prevent its occurrence. Regular exercise ought to be taken during the last months of pregnancy, and the bowels should be carefully kept open by the occasional use of a dessert spoonful of *lenitive electuary*, or mild doses of fine East India *castor oil*. If the woman be robust and full-blooded, the abstraction of a moderate quantity of blood from the arm is a necessary precaution, if not contra-indicated by peculiar circumstances. Two or three hours after delivery the infant should be allowed to take the breast, and this practice should be continued during the first fortnight, even if the mother have no intention of suckling the child herself. She ought to remain in bed during the first nine days, and not quit her apartment for a fortnight. During that period no stimulating food should be taken; the diet should consist principally of farinaceous substances, as panado, sago, arrow root, &c., with a little chicken broth or beef tea. Exposure to cold, mental excitement, and every thing stimulating, are to be carefully guarded against. The best laxatives are lenitive electuary and castor oil, but if the mother is not to nurse the child herself, her bowels should be freely opened, three days after delivery, by means of from two drachms to an ounce of *polychrest-salt*, (*sulphate of potash*,) dissolved in warm water.

PUERPERAL MANIA.

Professor Burns, of Glasgow, gives the following concise and correct description of Puerperal Mania. "The period at which this mental disease appears is various, but it is seldom, if ever,

sooner than the third day, often not for a fortnight, and, in some cases, not for several weeks after delivery. It usually appears rather suddenly, the patient awakening, perhaps, terrified from a slumber; or it seems to be excited by some casual alarm. She is sometimes extremely voluble, talking incessantly, and generally about one object; supposing, for example, that her child is killed, or stolen; or, although naturally of a religious disposition, she may utter a succession of oaths, with great rapidity. In other cases, she is less talkative, but is anxious to rise and go abroad. It is not, indeed, possible to describe the different varieties of incoherence, but there is oftener a tendency to raving than to melancholy: she always recognises surrounding objects, and either answers any question put to her, or becomes more exasperated by it: she can, by dint of perseverance, or by proper management, be for a time interrupted in her madness, or rendered in some degree obedient. In some instances, she reasons for a while pretty correctly on her insane idea. The eye has a troubled appearance; the pulse, when there is much nervous irritation, or bodily exertion, is frequent, but it is not in general permanently so, though it is liable to accelerations; the skin is sometimes rather hot, the tongue white; the secretion of milk is often, but not always, diminished, and the bowels are usually costive. There is seldom permanent head-ache; but this symptom is sometimes produced pretty severely by attempts to go to stool, if accompanied by tenesmus, or by efforts to void urine in strangury. In some instances the patient recovers in a few hours, in others, the mania remains for several weeks, or even some months; but, I believe, it never becomes permanent, nor does it prove fatal, unless dependent on phrenitis, (inflammation of the brain)."

TREATMENT. Puerperal Mania is a disorder of the nervous system. The treatment consists in keeping the patient as quiet as possible, in opening the bowels occasionally by mild laxatives, as *lenitive electuary*, or *castor oil*, in keeping the head cool by the application of eau de Cologne and water, vinegar and water, or any other simple cooling lotion. Mild anodyne remedies are useful in soothing the patient and preventing restlessness during the night: sometimes the *extract of henbane*, in the dose of from three to five grains, has a good effect; in other cases the solution

of the *acetate of morphine*, (page 490), is preferable. The diet should be light and nutritious. The secretion of milk should be stopped by removing the infant from the mother. But in this disorder, which is seldom dangerous, time, and careful nursing, are more to be relied upon than medicine.

PULMONARY CONSUMPTION.

Pulmonary Consumption (*Phthisis Pulmonalis*) is a disease of vast importance, whether we view it with regard to the extent of its ravages, or the selection of its victims; and is calculated more than any other human infirmity to excite the deepest interest, when we consider that on the continent of Europe and the temperate region of America, it causes about a fifth; and in Great Britain and Ireland according to the most correct data, nearly a fourth part of the whole mortality;* and that the great majority of those who perish from it are carried off in the bloom of youth, and in the full enjoyment of their mental faculties.

Consumption is preceded and accompanied by a peculiar morbid condition of the system, denominated tuberculous constitution, which, when it has been transmitted from parents to their offspring, may be recognized by certain indications easily traced, even at an early age, in the countenance and form of the body, as well as in the disordered state of the functions of certain organs. In childhood the face is pale, and has a flabby or pasty appearance, the upper lip is thick and large, the skin is peculiarly fine and appears white and waxy, and the eyelids are very subject to chronic inflammation. In many children the abdomen is preternaturally distended, while the chest is contracted, the limbs are slender, the joints large, and the veins appear full and conspicuous. In adults the signs of this state of constitution are more fully manifested. The hair is of a light colour, the eyes are blue and large, the eyelashes long, the teeth are white and regular, the fingers long and the nails contracted or curved; the form is slender, the countenance often appears fair and blooming, and many of the victims of this insidious disorder are endowed with superior mental faculties, united to gentle and amiable dispositions, which

* It has been computed from calculations founded on the tables of mortality, that the average number of deaths in Great Britain from Consumption is not less than ninety thousand annually.

endear them the more to their friends and relatives, and cause their loss to be felt with a more than ordinary degree of intensity. How many families have to lament the loss of the fairest and most accomplished of its members carried off by this great scourge of our islands, at an age when hopes are highest, and the world appears brightest !

The tuberculous constitution, however, is not confined to persons of sanguineous temperament and fair complexion ; it also belongs to those of a very different appearance ; the subjects of this affection are often swarthy and dark complexioned, with coarse skin, dark hair, long dark eyelashes, black eyes, thick upper lip, short fingers, broad nails, and a more robust habit of body, with duller intellect, and a careless or less active disposition. In both cases, with the advance of life and the progress of this morbid condition of the constitution, the digestive organs become frequently disordered from slight causes, the bowels are often constipated, and the mucous or lining membrane of the air-passages is strongly disposed to catarrhal affections. The insensible perspiration is generally defective, the pulse is more or less feeble, and the extremities frequently become cold. The flesh is deficient in firmness, and there is a want of bodily energy, which is more especially manifested by the frequent occurrence of a feeling of lassitude, and by more than ordinary fatigue being experienced after taking exercise. In young girls the menses are often scanty and irregular.

Consumption is generally acknowledged to be a disease of a scrofulous nature, and is caused by the deposition of scrofulous matter in the substance of the lungs. The deposition takes place in small granules, called tubercles, which are of a dull white or yellowish colour, of firm consistence, slightly transparent, varying from the size of a small pin's head to that of a garden pea or a small hazel nut, and disseminated more or less extensively through the lungs ; but they are almost invariably more numerous, larger, and more fully developed towards the upper and back part than at the base, and the majority of authors are of opinion that they are more frequently seated at the summit of the left than of the right lung. The progress of the disease therefore is usually from above downwards. In their earliest stage these little bodies are distinct from each other, but as they in-

crease in size and number they coalesce, so as to form thick opaque masses of a yellow colour and of considerable size. Having remained during a longer or shorter period in a latent state, these small tumours soften, and acquire the consistence and appearance of matter (pus); they communicate with each other, and at length the matter finds its way into the bronchial tubes or air passages, and passes off by expectoration. Each mass or cluster of tubercles, after reaching a certain size, undergoes the same change, and the cavities necessarily produced by the evacuation of the matter, tend to run into each other in consequence of the gradual development and softening of surrounding portions. The openings formed are at first small, but the softening of tubercles forming the walls of the cavities goes on gradually, until a free communication takes place. The excavations thus produced vary in size; sometimes they are not larger than a pea, at other times they might contain half a teacupful, or even a cupful of fluid; they may be seated deeply in the substance of the lungs, or may approach the surface, so as to be bounded only by the pleura, or enveloping serous membrane. The walls of the cavities constantly secrete matter, and portions of them gradually become detached. Sometimes the surrounding substance of the lungs remains sound, but in general it becomes more or less impervious to air; and before the patient dies, it is supposed that on an average three-fourths of the whole texture of the lungs are rendered incapable of carrying on the function of respiration.

In the *first stage* of Consumption the principal symptom is cough, which at first occurs only on rising in the morning, and is little noticed, but after some time it becomes more or less troublesome during the day, particularly after going up stairs, or on taking ordinary exercise, but, for a considerable length of time, is not accompanied by expectoration. At length the patient begins to expectorate a thin, whitish, semi-transparent mucus resembling saliva, and this is observed to be more copious on getting out of bed than during the day. A sensation of constriction now begins to be felt at the chest, and is at times attended with slight difficulty of breathing. After a longer or shorter period the general health commences to give way, a slight degree of shivering is experienced occasionally, and is followed by restlessness and heat of the skin, more especially of the palms of

the hands and soles of the feet, terminating in slight perspiration. As the disease gains ground the patient becomes gradually emaciated, and is unfitted for much bodily or mental exertion; his face is sometimes flushed, at other times pale; the pulse is considerably quickened, and the face appears flushed after eating, or any bodily exertion, lassitude soon follows, and the countenance assumes a peculiar expression of languor and fatigue. The patient feels at times chilly, and cannot bear cold as formerly; he is restless during the night, and sometimes awakes with his chest or the calves of his legs bathed in perspiration; and in many cases the hair loses its strength and falls off. At this period the tubercles are interspersed to a greater or less extent through the substance of the lungs, but are still greyish and semi-transparent.

The *second stage* commences with softening of the tubercles, and is manifested by a decided change in the appearance of the expectoration, which is now whitish, opaque, and does not run together in masses, but is seen in detached portions, of a round form, with irregular indented edges, and floating in the thin transparent liquid secreted by the lining membrane of the air passages. Sometimes these round masses contain white or yellowish grains, which are fragments of softened tubercles; at other times they are streaked with blood. This kind of expectoration is peculiar to Consumption. During this stage, sometimes at an earlier period, spitting of blood, which is one of the most marked symptoms of the disease, generally takes place: this may be slight, from a few streaks of blood to a spoonful, or it may be to the extent of a pint or more. In some instances the patient is seized with spitting of blood, while enjoying apparent health, and this may be the first symptom which he observes. Blood sometimes comes from the mouth or throat, or spitting of blood may be caused by deranged menstruation, or may arise from local injuries, but it rarely happens that blood comes from the lungs, unless the patient be consumptive. The cough is now greatly aggravated, and is troublesome during the night; the pulse is permanently quicker than natural, and ranges from ninety to one hundred and twenty beats in the minute; hectic fever (*see page 345*) becomes confirmed; the debility and emaciation increase; the face is pale during the day and flushed in the evening; and pains resembling rheumatism are felt at the shoulders and chest.

In the *third stage* all the symptoms already enumerated increase, the rigors or chills in the evening are severe, the consequent heat of the surface of the body, thirst and restlessness, are very distressing, and the morning perspirations more profuse. The cough occurs more frequently, and is followed by breathlessness; the voice becomes more or less hoarse or indistinct; the slightest exertion increases the difficulty of breathing, and many patients suffer severely from pains in the chest. The expectoration is now very copious, and assumes a yellow colour, with a dirty greyish tinge, and nauseous smell; it no longer appears in round masses with indented edges, but runs together, still appearing unmixed with the thinner liquid. Frequent purging also harasses the patient, and tends greatly to increase the debility and emaciation; the ankles begin to swell in the evening, and after some time remain permanently swollen. Even at this late period the patient still flatters himself with the hope of recovery, and the great majority of the sufferers are dismissed from this mortal scene with their minds agitated with conflicting hopes and fears. Some patients suffer comparatively little towards the termination of the disease; they waste away gradually until the powers of life are completely exhausted, and death takes place without a struggle. In other cases again, the hectic fever, difficulty of breathing, and frequent cough, followed by a sense of suffocation and sinking, are severe to the last.

The symptoms of the second and third stages of Consumption are sufficiently marked to prevent any mistake with regard to the nature of the disease, but it is then unfortunately too late to remedy the evil. On the other hand, to detect the first stage, and distinguish it from other diseases, is often a complicated problem, which cannot be solved without considerable difficulty. The following are the signs which more particularly indicate the probable existence of Consumption:

1st. When cough commences without any known cause, and continues longer than the ordinary duration of a common cold or pulmonary catarrh; and the patient is between twenty and thirty years of age, of a delicate constitution and slender form, with narrow chest,—there is reason to suspect that Consumption is commencing; and this suspicion will be rendered still more probable, if the cough be dry and short while the expectoration is

frothy, thin like saliva, brought up with difficulty, and in greater quantity on rising in the morning than at any other time. When the above signs are conjoined with the following circumstances, we have reason to form a still more unfavourable opinion of the case:—

2nd. Hereditary predisposition, which exercises a powerful influence in the production of Consumption.

3rd. Occupation—Consumption being a more frequent disease amongst the inhabitants of large towns, who are confined within doors, and more particularly in those who work in constrained positions.

4th. Emaciation, more especially when not accompanied with loss of appetite.

5th. Enlargement of the ends of the fingers and curving of the nails, symptoms which may frequently be observed during the first stage of the disease, and are rarely absent towards its termination. When to the above are added the following indications, there can then be no longer any doubt with respect to the existence of the first stage of Consumption.

6th. Fugitive pains in either side of the chest, or between the shoulders, generally attributed by the patient to rheumatism.

7th. Increased depression above and below the collar bones.

8th. A peculiar sensibility to cold, a slight degree of feverish excitement in the evening, and occasional night sweats.

9th. Spitting of blood—a very important sign, which, as we have already had occasion to notice, occurs frequently at an early period of the disease.

10th. In women, a gradual diminution, terminating in total suppression of the menstrual discharge.

Besides the general indications above enumerated, the physician is greatly assisted in forming an opinion respecting the character of the disorder, by certain physical signs derived from the application of the stethoscope, and percussion.

The duration of Consumption varies greatly in different individuals; sometimes it commences almost insensibly, progresses very slowly, and passes through its different stages almost without either fever or cough; this latent form of the disease is common in children, and in persons far advanced in life. In other cases again, the tubercles are extensively disseminated through the

substance of the lungs, and the disease declares itself abruptly ; the fever and prostration are sometimes so intense, and the emaciation so rapid, that the patient sinks in the course of a few months. This form of the disease is known to the public at large under the denomination of galloping Consumption, and occurs more frequently in women than in men. It often happens that Consumption advances slowly during a year or two, or even considerably longer, then becomes suddenly developed, and terminates fatally in a very short time. In such instances a slight cough is perhaps the only symptom particularly noticed by the patient or his friends, until he is suddenly seized with shivering, followed by a considerable degree of fever, with oppression and difficulty of breathing, and on examining the chest, the physician now discovers that the disorder has advanced beyond the reach of our art. In cases of this description, it is more than probable that tubercles had long existed in the lungs in a latent state, and that the softening process had commenced suddenly in a great many of them at the same time, giving rise to fever and the usual symptoms of the disease in their most intense form.

Sometimes the symptoms of Consumption appear to intermit ; they cease during summer, and the friends of the patient are led to believe that there is no longer any cause for alarm ; the following winter, however, brings back the symptoms, which again disappear almost entirely when the weather becomes mild ; these changes perhaps take place during several years before the disease becomes fully developed. Indeed, from the cases recorded, there is every reason to believe that Consumption has manifested itself in this manner during very long periods, fifteen and even forty years. Dr. Gregory, of Edinburgh, was in the habit of mentioning in his lectures the case of a person who laboured under Consumption during fifty years ; this, however, occurred before the discovery of the stethoscope, and the disease might have been only chronic bronchitis.

The duration of Consumption depends greatly on the circumstances of the patient ; the rich, who have it in their power to avoid all the causes which tend to aggravate the disease, are of course more likely to linger during a longer period than the poor, who enjoy no such advantages. The average duration of Consumption is from twelve to eighteen months.

We know that Consumption may sometimes be suspended for a considerable length of time, but a point of much greater interest is whether it ever admits of cure. We cannot do better than insert Dr. Latham's answer to this important question:—"All the world," says this experienced physician, "is asking us whether Consumption be curable? Indeed all the world is interested in the question: for there is hardly a family into which Consumption, sooner or later, does not enter; and when a man makes the inquiry (as it were) speculatively, or indifferently, he has most likely a real practical interest in it at home. He says, 'Is Consumption a curable disease?' But he would say, 'I have a wife or a child, a brother or a sister, who is decidedly consumptive; is there the least possible hope left me that they can recover?'"

"To the question proposed with *such intent*, it is a mockery to answer, 'Consumption is a curable disease;' for that its entire process from beginning to end—its formation, progress, cure—may be secretly transacted within the body without our knowing or suspecting anything about it.

"If you ask me as a physician, whether I have ever had experience of a perfect and satisfactory recovery taking place, where there have been all the best known *popular* symptoms of Consumption decidedly marked—symptoms which (*as far as they go*) no physician could possibly say were not those of Consumption—I answer 'often.'

"But if you ask whether I have ever had experience of the like perfect and satisfactory recovery where there were all these popular symptoms, and, withal, the conditions proper to Consumption, ascertained by competent observers to exist beyond a doubt within the lungs—I answer, 'hitherto never.'

"What shall we say then? How shall we answer the popular question in the popular sense, and still answer truly? We *cannot* say that Consumption is curable; but we *can* say (and truly) that there are cases of *imputed* Consumption which put on such an aspect of the *real* disease, that they are with difficulty distinguished from it, yet have not its essence. These are all within the possibility of cure.

"We can say that there are cases essentially phthisical, in which the disease is so lingering in a particular stage, that many years

are often required to bring it to its fatal termination. The decline is gradual, almost imperceptible, but sure.

"Again, we can say that there are cases essentially phthisical, in which the disease accomplishes its course, as it were, by parts and parcels; many times apparently beginning, and many times apparently ending, but always (as far as I see) beginning again: a year or two of disease, a year or two of health; then a year or two of disease again. Yet, upon these terms, I have known those who have passed neither a short, nor a useless, nor an unhappy life. I have known those who have so gathered up the fragments of their broken health, as to make them serve for high and useful purposes, and put to shame the fewer and smaller performances of stronger men."

CAUSES. Pulmonary Consumption is generally admitted to be referable in all cases to one common origin, viz., that debilitated state of the constitution termed the scrofulous habit. This is more particularly remarkable in the hereditary transmission of Consumption in scrofulous families, and in the frequent connexion which exists between Consumption and various symptoms and appearances of scrofula. We see that the development of an external scrofulous abscess bears a strong analogy to the formation and progress of tubercles in the lungs; both commence in the same slow, insidious manner, become solidified, then soften, and present the same kind of thick curdy matter. We also observe the same general symptoms—the hectic fever, the excessive sweating, the flushing of the face, emaciation, purging, &c., in scrofulous inflammation of the hip or knee-joint, as in confirmed Consumption.

Although the tuberculous or scrofulous constitution, or that state of the system which precedes Consumption, can generally be traced to hereditary origin, it may nevertheless arise from various causes, the principal of which are the following.*

* It would appear from the observations of Sir James Clark, that the tuberculous or scrofulous constitution, is not the only morbid condition of the parent which entails a predisposition to Consumption on the children; he states, that "there are several diseases which have that effect, the most frequent and important of which are a disordered state of the digestive organs and its consequences. Gout, cutaneous diseases, the injurious influence of syphilis, or long courses of mercury on the constitution, debility from disease, age, &c.; in short, a deteriorated state of health in the parent from any cause."

1. A cold, damp, and variable climate: hence Consumption is of more frequent occurrence in countries which have wet and cold alternating with heat, than in those which have a dry atmosphere, whether cold or hot. This is illustrated by the frequency of the disease in this country and in Holland; whereas, within the tropics and in the northern parts of Russia, where the atmosphere is dry, it is comparatively rare. It is also known that the inhabitants of mountainous regions, who breathe a dry atmosphere, are less subject to Consumption than those who inhabit flat countries, where the air is charged with moisture. We also observe that the disease carries on its ravages to a greater extent in spring and winter than in summer; and there is no fact better ascertained than that a great proportion of the natives of warm climates removed to this country, perish from Consumption. Even brutes suffer in the same manner; it is a well-known fact that nearly all the animals in our menageries brought from countries within the tropics, die from disease of the lungs.

2. Improper Food. Diet composed of substances not sufficiently nutritious or stimulating, or an inadequate supply of food, tends strongly to produce Consumption. Hence the disease occurs most frequently amongst the poor; and many consumptive individuals of this class of society, attribute their illness to the privations they have undergone from want of food; and among the indigent, particularly in large towns, it is observed that women frequently become consumptive while nursing. On the other hand, among the more affluent classes of society, there is reason to believe that the disease is often induced by using more food than the wants of the system require, more especially animal food and stimulating articles of diet. The injurious influence of improper or insufficient supply of food on the constitution is seldom exerted alone; it is generally associated with impure air, exposure to cold, and other causes not less prejudicial to health.

3. Impure air. Some modern authors place this at the head of the causes of Consumption, and there can be no doubt that it exercises a very pernicious influence on the animal economy. Breathing an atmosphere loaded with smoke, and polluted with numerous exhalations necessarily connected with the various processes of animal and social life, must tend greatly to increase the mortality of large towns, more especially among the working

classes, who reside in narrow dirty streets, lanes, confined courts, and similar localities, where the ventilation is imperfect, and the vivifying rays of the sun are excluded. Statistical evidence has clearly demonstrated, that in large towns, want of pure air, and confinement, together with poverty and vice, are the great sources from which spring both Consumption and scrofula, and which cause these disorders to be so much more prevalent than in country districts. Now, as Great Britain contains more large towns according to its extent and the amount of its population, than any other country in Europe; we need not be surprised at the greater mortality from Consumption; more especially when we consider, that to the depressing effects of the above causes is added the injurious influence of our moist, cold, and variable climate.

4. Excessive labour. This cause depresses the energies both of the physical and moral system; and whatever tends to debilitate the body tends also to induce Consumption.

5. Deficient exercise must also rank among the causes of Consumption, as well as of many other disorders, inasmuch as the various organs of the body cannot long perform their functions with regularity, and remain in a state of health, without an amount of exercise suited to the nature of the constitution.

6. Certain occupations. The sedentary occupations of literary men, tailors, shoemakers, weavers, dressmakers, &c., conjoined with want of pure air, produce the effect of diminishing the energy of the circulating system, as well as the stimulating and nutritive properties of the blood, and thereby induce that state of the constitution of which Consumption is to be considered as the local manifestation. This disease also appears to be frequently brought on by certain trades, which expose the workmen to an atmosphere loaded with irritating gases, and minute particles of various substances. Among the mechanics who are more particularly exposed to the influence of these irritating substances on the lungs, we may mention—the manufacturers of gun-flints, stonemasons, miners, polishers and grinders of metals, bakers, coal heavers, flax dressers, and those engaged in cotton factories. Where the tuberculous constitution already exists, the development of tubercles in the lungs may take place from various circumstances, as the occurrence of pleurisy, bronchitis, hooping

cough, measles; from abuse of spirituous liquors, improper clothing, want of cleanliness, extreme application to study, great anxiety of mind, disappointed hopes; in short, mental depression from whatever cause, and all the numerous circumstances which weaken the general powers of the system. In Italy, Spain, Portugal, and other parts of the south of Europe, Consumption is understood to be contagious; whereas, in this country, in France, and in the northern countries of Europe, an opposite opinion prevails.

TREATMENT.—A point with regard to which all parties are agreed, is the hereditary nature of Consumption; but, although this fact is well known to the public, it seems to have very little effect in preventing the healthy from intermarrying with the consumptive; we even see, daily, matrimonial connexions formed among distant branches of the same family, although the parties are well aware that a scrofulous or tuberculous taint exists in their systems, which must necessarily be transmitted to their offspring, and afterwards in all probability developed in the glands of the neck or mesentery, in the joints, or bones, or in the lungs, producing the fatal disease now under our notice. Where, for example, two first cousins of consumptive habit form a matrimonial alliance, the predisposition entailed on the children becomes so powerful that the disease is almost sure to declare itself, and they perish one after another. On this point Dr. Mason Good has recorded his opinion in language not to be mistaken: he says, “that intermarriages among the collateral branches of the same family, tend more than any thing else to fix, and multiply, and aggravate hereditary predisposition. And hence, nothing can be wiser, on physical as on moral grounds, than the restraints which divine and human laws have concurred in laying, on marriages between relations.”

We shall now proceed to notice the measures which ought to be adopted in order to ward off Consumption where children are born with a predisposition to it. If the consumptive tendency be derived from the father only, while the mother is robust and in sound health, she ought to obey the law intended by nature, and suckle her own child. But, on the other hand, if the predisposition to the disease be inherited from the mother, a healthy nurse should be procured to suckle the infants; and this measure

becomes the more necessary when the health of the mother is in a delicate state, because if she were to nurse her child under such circumstances, not only would her own health suffer, but her child would be rendered sickly, and liable to be carried off during the dangerous process of teething, or by any of the various ailments of infancy. The child should be suckled from twelve to eighteen months, or until the first set of teeth appear; and, as a general rule, the only nutriment allowed during the first six months should be the nurse's milk. It is scarcely necessary to mention that the qualifications of a hired nurse are of great consequence: she should be of a healthy appearance, and care should be taken to ascertain that her constitution is not tainted with scrofula; she ought not to be too young or inexperienced; her milk should be plentiful, and suited to the age of the child she is to suckle. It would be wrong, for example, to employ a woman who has been nursing her own child for six or eight months to suckle a new-born infant. The character and habits of a nurse also deserve attention. Many women think that while nursing they cannot eat and drink too much, and they consequently indulge their appetites to an unwarrantable extent; and this, conjoined with indolence and other bad habits, render them very improper nurses for delicate or scrofulous children.

The child must be watched with the greatest care from its earliest infancy, and every means adopted to give strength and vigour during the growth and development of the various structures of its tender frame. Dress carefully suited to the season, neither too light nor too warm and oppressive, frequent ablution in order that the body be kept thoroughly clean, and the functions of the skin duly performed—habitation where the air is dry and wholesome—a well-ventilated nursery—and the greatest attention to the state of the digestive organs and proper regulation of the bowels. These are the objects to be chiefly attended to during infancy; and with the advance of life the greatest care must still be taken to keep the child under circumstances the most favourable to health. Over-feeding and all stimulating articles of food should be carefully avoided, animal food must be given with a sparing hand, and regularity in the hours of meals strictly attended to. As long as the bowels continue regular and the evacuations are of a healthy and natural

appearance, we have reason to infer that the diet is in proper quantity, and suited to the digestive powers.

Nothing tends more to maintain the various organs of the body in a state of healthy activity, and equalise the distribution of blood, and consequently nourishment, heat, and in a word life, throughout the animal economy, than free and regular exercise in the open air. Healthy children are naturally inclined to take exercise, and the out-door amusements which they make choice of, are generally the best suited to invigorate and promote the growth and development of the body. The manner in which young girls are at present educated is often productive of the most injurious consequences, more particularly to the delicate and to those in whose constitutions there exists a tendency to consumption or scrofula. The long confinement in school-rooms—the constrained position in which they are often kept for hours, perhaps leaning over a piano or a drawing table, or in some stiff or erect posture, conjoined with circumstances connected with dress, as wearing thin shoes, the prevailing and pernicious fashion of tight dressing, and the absurd custom of wearing stays before the body is sufficiently matured—the formal walk, timed to a minute, instead of the cheerful and unrestrained exercise and amusement which at that early age the salutary dictate of nature leads them to enjoy; and the various unnatural restraints so rigidly and unnecessarily enforced, and followed in thousands of instances by the worst effects. The extremities become cold, and the blood is preternaturally determined to the chest, where it accumulates or becomes congested, thus increasing the tendency to the formation of tubercles in the lungs of those constitutionally predisposed to Consumption, or sowing the seeds of this fatal malady among others in whom no hereditary tendency exists. It is, indeed, much to be regretted that the physical education of girls is so much neglected; the cultivation of the mental faculties, and the acquiring of a fashionable education, seem to be considered by many parents as the first and paramount consideration; and at the majority of boarding schools, to excel in a variety of accomplishments is deemed of more importance than the maintenance or improvement of health. The consequence of this is, that since the children of consumptive parents are often endowed with a superior development of the

mental faculties, and great aptitude for the attainment of knowledge, their minds are often worked to the fullest extent, to the neglect of proper exercise and other measures conducive to health, in order that they may excel in educational pursuits; and thus their health is slowly and almost imperceptibly impaired, until at length it becomes irrecoverably injured, and the highly-gifted and accomplished young lady, with a mind still active, with personal beauty, and with every capacity for enjoying life, is hurried to an early grave by the terrible, though silent and insidious enemy of the most beautiful and most interesting part of our race.

Since, therefore, the seeds of the disease are often sown early in life, it is of essential importance during the whole period of infancy and childhood, that the watchful eye of the parent should be directed to detect any deviation from health; and if cough, hoarseness, or any degree of huskiness in the voice be observed, if any inflammatory excitement from whatever cause be lighted up in the system, if pain be felt in the chest from time to time, if the bowels become deranged from improper diet or manner of living, if languor and lowness of spirits, or an unhealthy appearance of countenance be manifested, and, in a word, if any departure from health however slight be noticed, it should not be allowed to gain ground. No time should be lost in adopting the remedial measures suited to the nature of the case, and to these should be conjoined the refreshing and exhilarating air of the country, and sea-bathing during the season.

The close application required according to the system of education generally adopted at schools, necessarily detracts from the time which ought to be allotted to active exercise in the open air, and this along with other untoward circumstances connected with the physical education of youth, often, without giving rise to any very marked indications, pave the way to the development of Consumption at a more advanced period of life. The age at which the disease declares itself in those predisposed to it, is generally understood to extend from about the eighteenth to the twenty-fifth year in males, and from the sixteenth to the twenty-second in females. The signs which lead us to dread the deposition of tuberculous matter in the lungs of adults are, an imperfectly expanded figure, a pale or unhealthy appearance of countenance, deficient firmness of body, preternatural fulness of

the veins, dry or harsh skin, feeble pulse, constipation or irregularity of the bowels ; and in females the late appearance and subsequent scantiness or irregularity of the menstrual discharge. Whenever it happens, therefore, at this period of life that the above or other symptoms of bad health are manifested in those constitutionally predisposed to Consumption, no time should be lost in resorting to the necessary measures to prevent the disease from being lighted up,—for it should ever be borne in mind, that it is now, and we may almost say only now, (and the fact cannot be too strongly impressed on the minds of those interested in the phenomena of Consumption,) that we can reasonably expect to be able to prevent or arrest its progress. We may proclaim the truth on this point without running any risk of doing harm by alarming the consumptive ; for one remarkable feature of the disease is the disbelief of the patient that there is any thing of a serious nature the matter with him, even after the symptoms are sufficiently marked to convince his friends that the disease has already commenced. In the great majority of cases hope continues to the last ; and indeed so characteristic is this of the disease that many intelligent medical men have perished from it, insisting to the termination of their career that no cavities existed in their lungs, and that they should ultimately recover. On the other hand, when persons of sedentary or irregular habits think they are labouring under Consumption, and seek medical relief, it seldom happens that there is much the matter with them beyond certain symptoms of indigestion brought on by their manner of living.

The question, therefore, now to be considered is—what are the measures to be adopted in order to counteract this phthisical tendency ? The principal indication to be fulfilled is to invigorate the system generally, and the best means of effecting this desirable object consist in properly regulated regimen and diet, rather than in the use of medicine. The patient should rise early in the morning, breakfast and dine early, his diet should be generous without being too stimulating, he should take plenty of animal food plainly dressed, with good bread, and a moderate quantity of wine or sound beer : the latter being less stimulating is generally to be preferred. Slops and watery diet are to be avoided. He ought to take exercise on foot, on horseback, in an

open carriage, or on the top of a coach, and should be, at least, four or five hours in the open air every day when the weather permits. Every necessary precaution should be taken to avoid danger from wet feet, sitting in currents of air, the long-continued influence of cold and wet, and sudden alternations of atmospheric temperature, as going out of hot rooms into the cold night air, or passing from the latter into heated rooms; but exposure to the open air at all seasons when the body is protected by suitable clothing, and proper precaution is observed, improves the general health and strength, and tends strongly to fortify the system against the impression of cold, whereas confining phthisical persons in warm rooms during winter, and the adopting of other measures for the purpose of escaping the effects of the atmospheric changes of a climate so cold and variable as that of England, are considered, by every well-informed medical man, to have a tendency to debilitate the constitution, and instead of counteracting the unfavourable influence of the climate, only render them more subject to it, and thus produce the very opposite effects to those intended. Another powerful means of hardening the body so as to allow the invalid to withstand atmospheric vicissitudes and render him capable of following his usual avocations, and enjoying the rational pleasures of life, is *cold bathing*. At first the tepid shower bath may be used, or simple ablution of the trunk of the body by means of a sponge or a towel dipped in water, containing a portion of salt or vinegar, (two ounces of either to a pint of water,) and after the skin has been carefully dried, friction with the hair glove or a rough towel should be used. The time for using this process is immediately on getting out of bed. It is advisable in all cases, whether the shower bath or sponging be employed, to begin with warm water, reducing the temperature gradually until it can be used quite cold. Either of these methods may be continued daily through the coldest winter, but the latter being the least troublesome, is generally preferred. Both sexes should wear flannel next the skin from the collar bones to the knees: it ought to be worn of a thinner texture in summer than in winter, but never altogether discontinued. Many young ladies bring Consumption on themselves by deficiency in clothing, and wearing silk stockings and thin shoes during winter; these habits are often persisted in, in spite of

repeated warnings, and when conjoined with late hours, long-continued excitement, and other evils of a luxurious and artificial manner of living, are the means of destroying thousands of lives.

Excess of every kind, whether of eating, drinking, or exercise, should be assiduously guarded against; nothing can be beneficial which produces excitement or hurries the circulation through the lungs, so as to bring on slight cough or difficulty of breathing: hence the diet, as well as the kind and extent of exercise to be taken, should depend on the strength of the individual, and the circumstances connected with each particular case.

The state of the bowels should be attentively noticed in every case of incipient or threatened Consumption. Constipation, which is the most frequent departure from their healthy condition, is to be corrected by mild laxatives, as *rhubarb and magnesia*, or the pill No. 109, page 175; but the persons whose cases we are now considering should be made aware that they cannot commit a greater error than in resorting to the frequent use of strong purgatives, because these have the effect of increasing the general debility, and producing and keeping up a state of irritation of the lining membrane of the bowels, circumstances which cannot fail to accelerate the approach, or aggravate the early symptoms of the disease.

We have yet to notice another preventive measure of great importance, namely, the insertion of an *issue* or *seton*, at both sides of the chest, under the collar bones, or long counter-irritation by means of the *tartar emetic ointment* (see page 26.) The latter measure is now very generally used in this country, and with the very best effects. This method of treatment cannot be too strongly recommended, more especially where there is a family predisposition to the disease.

It is at this period, or at the commencement of the first stage of the disease, that change of climate is to be recommended; and we would earnestly advise those whose circumstances will allow them to avail themselves of this valuable resource, not to remove to any part of the continent of Europe, but to proceed at once to a tropical climate. We do not believe that much benefit is likely to accrue from removing to any part of Europe, inasmuch as the climate does not differ sufficiently from that of the British islands to render the change of much avail. The limits of this volume

will not allow us to enter into any detail respecting the disadvantages to which the different places generally resorted to by phthisical patients are liable, but we may remark that Montpellier, Aix, Marseilles, and other towns in the south-east of France, are the worst that could be chosen for those affected with pulmonary complaints; and whoever has experienced the rude blasts of the cutting north-west wind called the *mistral*, during winter, or the excessive heat of summer, must be well aware of this fact. To show the frequency of Pulmonary Consumption at Montpellier, which formerly enjoyed so high a character as a resort for consumptive patients from this country, it may be mentioned that not less than a third of the deaths which occur in the hospital of that city are from Consumption. Nice and Genoa have little advantage over the towns of Provence; indeed no part of Italy is suitable for invalids in summer, and in winter a great deal of rain falls, both at Rome and Pisa; and though the climate of these cities is comparatively mild, yet it is not unfrequently damp and gloomy. The climate of Florence is often cold, and subject to frequent alternations of temperature. Naples is subject to high winds, and the air is too exciting. Lisbon is often very cold in winter. Many of the French physicians recommend Palermo in preference to any of these places.

But the climate which we consider to be the most eligible for pulmonary complaints, is that of the leeward islands of the West Indies. No climate can be more equable and salubrious than that which is enjoyed by the inhabitants of the windward parts of these delightful islands; the climate varies little through the whole year, and the never-failing sea breeze carries with it health and strength to the invalid. He may there command all the comforts and conveniences of the mother country which can be made available; he will not be subject to the embarrassment arising from the use of a foreign language; he will enjoy the society of a people long celebrated for the urbanity of their manners, and the hospitality and kindness which they never fail to show towards strangers, an advantage of no small importance to a valetudinarian far distant from his home. St. Vincent, Barbadoes, Montserrat and St. Kitts, are the islands more particularly suited for the patients whose cases we are now considering; but there are many salubrious situations in the hilly districts of all the leeward islands, where

Europeans may take exercise at any period of the day without much inconvenience, and where the invalid can enjoy the same advantage (to as great an extent as health requires) in the morning and evening.* There is one thing, however, which it is our duty to notice, and which every medical man who has visited these colonies knows well, that where the disease has reached the second stage, that is, where it is confirmed, a warm climate debilitates the patient, and tends to shorten his days.

There is no better winter residence for phthisical patients than some parts of Egypt. The climate of Grand Cairo in the winter months is dry, equable, mild, and much superior to that of any part of Europe, and that city can now boast of having two excellent hotels, (Waghorn's and Hill's) where strangers may spend the winter very comfortably. Savary stated that pulmonary diseases are almost unknown in Egypt, and this statement is confirmed by Clot Bey, a very eminent French medical man at the head of the Egyptian medical school. Indeed Egypt appears to have enjoyed a high reputation for the salubrity of its climate in more remote times. The younger Pliny advised his freedman, who was affected with spitting of blood, to go to Egypt, where he recovered.

If from circumstances the patient be unable to quit this country, he will find Torquay, in Devonshire, Undercliff, in the Isle of Wight, and Clifton, the most desirable places for a winter residence.

If there be much debility and emaciation, flushing of the face, cough which has continued during several weeks, unusual perspiration during the night, and other symptoms indicative of the commencement of the first stage, the following draught should be given daily in three doses.

No. 272.

Infusion of calumbo, three ounces,
Elixir of vitriol, forty drops,
Quinine, a grain and a half,
Tincture of henbane, a drachm and a half. Mix.

* The steam communication which is shortly to be opened between Southampton and the West India islands, will be of great advantage to invalids desirous of visiting those colonies. The royal West India mail-packet steamers now building, are to measure about 1200 tons, and to be propelled by engines of 440-horse power; the time required for the passage will be about sixteen or seventeen days.

This mixture, together with exposure in the open air during several hours daily, animal food twice a day, with good beer, or two or three glasses of sound wine, according to the habits of the patient, and carefully avoiding every thing of a debilitating tendency, will in many cases check the night perspirations, abate the cough, and give strength and vigour to the system.

Many distinguished practical physicians strongly recommend the administration of emetics at the commencement of Consumption—twenty-five to thirty grains of *ipecacuan*, or half a drachm of the *sulphate of zinc (white vitriol)* in water, to be taken early in the morning once, twice, or even thrice a week, according to the circumstances of the case. This practice it is stated may be continued for months with perfect safety, and does not interfere with any general treatment which may be considered necessary. We have no knowledge of this method of treatment from our own observation; but from the many able practical writers who bear testimony to the good effects which it has produced in numerous cases, it appears to be worthy of consideration.

When hectic symptoms are manifested, the pulse remaining permanently quicker than natural, while the cough and emaciation are gaining ground, twenty drops of the *tincture of foxglove (digitalis)* should be added to the above mixture, and the quantity of tincture of henbane may be gradually increased.

When unfortunately the disease becomes confirmed, our treatment must be in a great measure palliative, and principally directed to the relief of the more urgent symptoms. The strength is to be supported by nourishing diet, the purging should be checked by *chalk mixture* with *laudanum* (see *Diarrhoea*, page 213)—the night sweating may be corrected by the administration of *elixir of vitriol* in the *infusion of roses*—demulcents with laudanum are to be given to alleviate the cough (see *Bronchitis*)—*opium, morphine, hemlock, or henbane*, are to be employed to soothe irritation; the redness and tenderness of the tongue and the aphthous ulcers of the mouth, are to be relieved by washing the parts with a solution of *borax* or *Armenian bole*, and honey. These are the chief measures to be adopted for the purpose of ameliorating the symptoms, and rendering the advance of the disease less distressing. When the lungs are disorganized no hope of recovery

can be offered to the patient; under these distressing circumstances he will do well to prepare for

“That undiscover'd country, from whose bourn
No traveller returns.”

QUASSIA.

The Quassia tree is a native of South America, particularly of Surinam; it also grows abundantly in some of the West India islands. The wood, bark, and root of this tree are all exceedingly bitter, but possess no aromatic principle. The wood, which is the part chiefly used for medicinal purposes, is a cheap, simple and valuable tonic, especially in some forms of indigestion, in looseness of the bowels (diarrhoea), in ague, and remittent fevers of warm climates.

Quassia is much used on the continent of Europe, to give bitterness to malt liquors; but in England the use of it for this purpose is prohibited by law. The *infusion of Quassia* is prepared in the following manner. “Take of Quassia, sliced, two scruples, boiling water a pint; macerate for two hours in a vessel lightly covered, and strain. The dose is a wine-glassful three times a day.”

QUINSY.

Quinsy or Inflammation of the Throat is seldom ushered in by shivering, as in other inflammatory diseases; it usually commences with a slight degree of head-ache and stiffness of the neck, and a feeling of general uneasiness. At the same time, or shortly after, a slight difficulty in swallowing is experienced, together with a sensation of heat and dryness or rawness of the throat, which is soon followed by pain more or less severe, according to the intensity of the inflammation. The patient has a constant inclination to swallow, and every attempt at deglutition greatly increases the pain; the voice becomes nasal, and the articulation imperfect, so as materially to affect the speech; the mucus of the mouth is very tenacious or slimy, and every attempt to spit it out is attended with an aggravation of the pain. Sometimes the patient cannot open his mouth sufficiently to allow the throat to be examined, but if this can be effected, one or both tonsils, generally both, although one is usually more affected than

the other, are observed to be red and swollen, the uvula or pap of the throat is also enlarged, and hangs down on the base of the tongue. People in common language then say that the almonds of the ears and the pap of the throat are down; this however is a popular error; these bodies cannot quit their natural position, although like all other organs they are increased in size by inflammation. It often happens that the tonsils enlarge until they touch each other; the uvula is then thrown backwards, and almost entirely concealed by them. In many cases the inflammation extends over all the back part of the throat, and even passes along the Eustachian tube to the ear, producing slight deafness, buzzing, and pain. The tonsils are not unfrequently swollen to such an extent that deglutition is entirely prevented, and if the patient attempt to swallow any kind of drink it is immediately returned by the nostrils.

If the throat be examined at the commencement of the disease, the tonsils appear like two red balls, dry and shining; but at a later period we may observe in the majority of cases, several oval or irregularly shaped spots of a yellowish, sometimes of a greenish colour, not only upon the surface of the tonsils, but on all the parts to which the inflammation has extended. Now, we must take care not to confound this appearance, which arises simply from thick, tenacious mucus deposited upon the inflamed surface, with that which results from a much more dangerous form of the disease—the malignant or putrid sore-throat, in which false membranes are thrown out similar to those which we have described as being formed upon the lining membrane of the windpipe in croup.

The feverish symptoms which accompany Quinsy are generally more severe than the local disorder would lead us to expect; the pulse is full and frequent, sometimes as high as 120 in the minute; the face is flushed; there is headache with a sensation of fulness and weight in the head; there is considerable heat of skin, which sometimes alternates with slight shivering; the tongue appears swollen and is covered with white or yellowish coloured mucus, and there is a disagreeable taste in the mouth; sometimes there is nausea or vomiting; the bowels are generally constipated; the urine is scanty and high coloured; the patient is restless during the night, and complains of a feeling of fatigue and general oppression.

Quinsy commonly terminates in the course of a few days, in *resolution*, that is to say the pain, swelling, and other symptoms, gradually subside; but when the inflammation runs high, matter not unfrequently forms in one or both tonsils, or in some other part of the throat. The formation of matter is sometimes announced by rigors or shivering, and in most cases the shooting and lancinating pain changes to a dull, throbbing sensation, the breathing still remaining more or less impeded, while deglutition continues to be almost if not altogether prevented. It is often, however, impossible to tell whether suppuration has taken place or not. On examining the throat matter may in some instances be felt fluctuating under the finger, and then the aid of the surgeon is sometimes required to give it vent, but in most cases the abscess bursts of its own accord, and the matter, which is extremely fetid, is either discharged by the mouth, or passes down into the stomach.

Quinsy generally runs through its course in from four to eight days, but does not terminate in some instances till the fifteenth day, rarely later: it is very seldom dangerous, however severe the symptoms may be. Many persons are very subject to Quinsy whenever they are exposed to its exciting causes; and it is remarkable that in some people the inflammation, however severe it may be, never terminates in the formation of matter, whereas in others, whatever remedial measures may be adopted, suppuration is sure to take place.

CAUSES. Exposure to vicissitudes of temperature, sitting in a current of air, wet feet, wearing damp linen, going out of a heated room into the cold air, or cold and wet in whatever manner applied, are the most frequent causes of Quinsy. This disorder occurs generally in young people, in those of full and robust habit of body, and is common in all cold and variable climates, more especially in spring and autumn. It may also arise from a disordered state of the stomach. Women are more particularly subject to it during the period of menstruation.

TREATMENT. In robust, full-blooded individuals, it may be necessary, if the inflammatory symptoms run high, to take blood from the arm; but in ordinary cases, ten, twelve, or fifteen *leeches*, applied under the angles of the jaw, followed by warm fomentations or poultices, to promote the bleeding, will be sufficient. The

bowels should be freely opened by *calomel* and *jalap*, five grains of the former combined with fifteen to twenty grains of the latter, or a dose of *castor-oil* may be taken, and the feet should be repeatedly bathed, the water being used as hot as it can be borne—the French in such cases apply mustard cataplasms to the feet. If the symptoms be not considerably relieved at the expiration of twelve or fifteen hours, the same number of leeches should be again applied to the throat, and if the inflammation be not checked by these measures, it will run its course and terminate at the usual time, either in resolution or suppuration. To moderate the symptoms and conduct the inflammation to a favourable termination, it will be proper to take forty grains or a drachm of *nitre*, with one or two grains of *tartar emetic*, mixed in barley water, in the course of twenty-four hours, and this remedy should be continued daily as long as there is any chance of suppuration being prevented. Gargling the throat in the acute form of this disorder, is in most cases exceedingly irksome, or attended with considerable pain, and is therefore to be avoided; but frequently inhaling the vapour arising from hot water mixed with *vinegar*, or from a decoction of *poppy-heads*, will be found very serviceable in every stage of the disease; and where Mudge's inhaler cannot be procured, the steam may be drawn in through the spout of a tea-kettle or coffee-pot, or by means of an inverted funnel. If suppuration cannot be prevented, the application of warm poultices of bread and milk or linseed-meal to the sides of the throat, (not on the fore part of the neck,) and diligently steaming the throat as above directed, are the means to be employed to promote the formation of the matter. In this disorder, the patient has little inclination to eat, and suffers so much in swallowing as to render it scarcely necessary to mention the propriety of keeping him on low diet.

Emetics are contra-indicated when Quinsy is purely inflammatory, and the symptoms are running high; but when it is merely symptomatic of irritation of the stomach, when the tongue is foul, the breath offensive, and the patient is troubled with acrid eructations, nausea, and inclination to vomit, an emetic of twenty grains of *ipecacuan* with one grain of *tartar emetic* taken in a little warm water, and followed by a brisk purgative, frequently removes every symptom of the most severe Quinsy. Even when the

tonsils are so much swollen as to render deglutition painful and difficult, an emetic may be given with perfect safety; for in such cases the patient can vomit with much greater ease than he can swallow.

In children and young people the best remedies at the commencement of sore throat are emetics and purgatives; these when timely administered often arrest the progress of the disorder, and ought never to be neglected.

In the *relaxed sore throat*, or that state of chronic enlargement of the tonsils and uvula, to which many people are subject in the spring and winter seasons in all countries where the weather is cold and variable, the remedies usually employed are astringent gargles, such as a strong decoction of oak bark, or the following:

No. 273.

Purified alum, one drachm,
Tincture of myrrh, half an ounce,
Water, seven ounces. Mix.

Ten grains of *nitrate of silver (lunar caustic)*, dissolved in one ounce of water, constitute an excellent application for this description of sore throat—it should be applied by means of a camel-hair pencil. Many people derive benefit from the use of *Cayenne lozenges*; but it often happens that the throat continues in this relaxed state for months, obstinately resisting every kind of local treatment. Under such circumstances, change of air, active exercise, and temperate habits, will be found the best remedies.

A mode of treatment which is said to be highly efficacious, has been proposed by M. Velpeau, a distinguished French surgeon. This consists in applying powdered alum, two or three times a day, to the inflamed parts of the throat. The tip of the finger, moistened, is to be covered with powdered alum, and then rubbed all over the inflamed parts, while the tongue is depressed with the handle of a spoon. The powder may also be applied with a small brush, or a bit of sponge, or cotton, &c., on the end of a little stick, but M. Velpeau prefers the use of the finger, because with it we can more readily reach *all* the inflamed parts at the back of the throat, or an intelligent person can apply it with his own finger.

As a preliminary measure, the patient should gargle his throat with water, once or twice, before the application of the alum, in order to remove any mucus or slimy matter which might prevent the remedy from coming into immediate contact with the affected parts of the mouth. The use of the powder should be repeated twice or thrice a day, at equal intervals, and in the mean time the patient should gargle his throat with a solution of one to four drachms of alum in four ounces of barley water. When the inflammation is mild, the alum gargle alone will be sufficient, but whenever much swelling and soreness are present, we should have recourse at once to the powdered alum. By this method of treatment severe sore throat is often cured in a few days, and it has the additional advantage of preventing the well-known tendency of the disease in some persons, to end in suppuration, or recur again and again with persevering obstinacy.

REMITTENT FEVER.

Remittent Fever is nearly allied to the intermittent form, and is distinguished from it by the greater severity and danger of the attack, by the febrile symptoms merely abating for a time, and never altogether going off. It is chiefly a disease of warm climates, and is the form of fever that commonly attacks Europeans on their arrival in tropical countries; it is then called "seasoning fever." The causes are the same as those that give rise to intermittents, only acting with increased intensity.

Some indisposition usually precedes an attack of Remittent Fever for several days. The patient is listless, languid, complains of head-ache, pains in the back and loins, and oppression at the chest. The appetite is impaired, and the bowels are irregular.

The attack in general commences with shivering, or a sensation of cold and chilliness, alternating sometimes with flushes of heat. This state is soon succeeded by burning heat and dryness of the skin, flushing of the countenance, and injected eyes, with great increase of the head-ache, and pains of the back and limbs. The tongue is foul, and the mouth sometimes dry and clammy; there is nausea, and perhaps vomiting, with much thirst. The pulse, which during the cold stage was weak and quick, is now full and strong; the breathing may be hurried, and the patient

is extremely restless. The throbbing and pain of the head are occasionally very violent, and may end in delirium; the urine is scanty and high coloured; the bowels are generally though not always constipated; and some degree of tenderness is felt on pressing with the hand over the stomach.

After these symptoms have continued from twelve to eighteen hours, partial perspirations appear, followed by an abatement of the febrile symptoms, or they subside without any moisture on the skin. The remission is marked by the pulse being less full and frequent, the skin cooler, and the pains in the head, back, and loins relieved; and by the patient being free from delirium, and the stomach in a less irritable condition. Nine or ten hours elapse before the patient is seized with another paroxysm, which may come on at once without any feeling of cold, or be preceded as at first by chilliness or shivering. The disease goes on in this manner with alternate remissions and returns of fever. If the case end favourably, each succeeding paroxysm becomes milder, until the fever entirely disappear, or it may be carried off by copious perspirations. The periods of remission and exacerbation are very irregular, though the abatement of fever very generally takes place in the morning. In cold climates the disease may run on to the fourteenth day, or later; but in hot countries it is much more rapid in its course, terminating sometimes as early as the third day, but the usual period is from five to seven or nine days.

In the more violent and dangerous cases, the skin is burning hot and the thirst intense; the vomiting is incessant, scarcely any thing being retained on the stomach; there is violent throbbing or shooting pain of the head, attended sometimes with furious delirium, and the pulse is full, quick, and strong. The remissions are short and indistinct, and, if the fever proceed to a fatal termination, it may become continued. The tongue is furred; red, contracted, and dry, or crusted with black matter; the skin and eyes may have a yellowish tinge; and dark-coloured matter may be discharged from the stomach. In some cases before death there are copious perspirations, and the patient sinks rapidly, or the hot, pungent, dry skin continues to the last.

Fever of the remittent type has been divided into different varieties from some peculiarity of the symptoms, or from particular organs being affected. Thus, for example, when the liver

is diseased, or there is much disorder of the biliary organs, it has received the name of *bilious remittent*; here the eyes become yellow, and the skin acquires a dusky yellowish hue; there is vomiting, or purging of bilious matter; the tongue is loaded with a yellow fur; and there is often tenderness on pressing with the hand under the ribs, at the right side, in the situation of the liver. The irritability of the stomach in this form is generally very obstinate, and the determination of blood to the head great. Our limits, however, will not allow us, nor indeed do we consider it necessary, to enter minutely into the description of the forms of the disease which have been founded on the descriptions above referred to.

Remittent Fever in its malignant forms is extremely fatal. With many of the symptoms already noticed, it is then accompanied with great depression of strength and spirits; the system recovers but imperfectly from the first shock of the attack; the stage of remission is very short, the fever returning with increased severity; the pulse, instead of being full and bounding, is feeble and rapid; and there is burning heat with violent pain of the head, and often delirium. Great anxiety and oppression at chest, nausea, and vomiting, are experienced; the skin is moist and clammy, or hot and dry; the patient is extremely restless and breathes hurriedly; and there may be swelling in the situation of the stomach, which is painful on pressure. Incessant vomiting, hiccup, low delirium, or complete insensibility, yellow skin, hard swelled abdomen, cold clammy perspiration, or hot dry skin, are the symptoms which usually precede death.

Remittent Fever in warm climates is often very treacherous at its commencement. The symptoms may be so mild for the first few days that the patient pays very little attention to his illness, when all at once the disease becomes malignant, and if it do not end fatally, is attended with extreme danger. In hot climates the first symptoms of fever ought never to be neglected, for however slight they may seem to be, it is impossible to tell how soon they may become malignant, which might have been prevented by a timely recourse to treatment.

Remittent Fever is sometimes complicated with dysentery; it also passes occasionally into the intermittent form.

TREATMENT. In most cases of Remittent Fever, when the patient is young and strong, blood-letting is required, provided the disease has not existed for several days. The propriety of abstracting blood from the system will be indicated by a full, strong pulse, hot skin, violent headache or delirium, embarrassed breathing, &c. The quantity to be withdrawn must be in proportion to the age, constitution, and habits of the patient, and severity of the symptoms; but as in all diseases of an acute nature (where blood-letting is practised) the blood should be permitted to flow until a decided impression is made on the symptoms, or the patient feels faint. If after a few hours (from six to twelve) the pulse be still strong and hard, and little or no relief has been afforded by the first blood-letting, the arm should be again tied up, and blood taken away until some effect is produced.

Emetics are much recommended, by some writers, at the commencement of Remittent Fever, but they should be administered with great caution. Irritability of stomach is a frequent, and in hot climates often a most obstinate symptom, which in many instances is aggravated by the action of emetics, as we have sometimes had occasion to observe in the West Indies.

As the bowels are generally in a disordered state, the patient should be freely purged; from five to ten grains of *calomel*, with fifteen or twenty grains of *jalap*, may be given, and followed in three hours by a draught of the infusion of senna with salts, (see page 32;) the powder should be repeated every six hours, with intermediate purgative draughts and purgative injections, if necessary, till the bowels are freely acted on. If the stomach is irritable and rejects these purgative medicines, six to ten grains of *calomel* and one grain of *opium* made into pills will generally be retained, and can be followed by the purgative powders and draughts when the stomach is settled. When the bowels have been freely evacuated, and the skin still continues hot and dry, with no abatement of the fever, the patient may take two grains of calomel, with six grains of James's powder, mixed in a little jelly, every fourth hour till perspiration make its appearance. The action of these powders will be promoted by administering a tablespoonful of the following mixture in a wineglassful of water, at intervals of three or four hours :—

No. 274.

Mindererus's spirit, (liquor of the acetate of ammonia,) half an ounce,
Nitre, thirty grains,
Sweet spirits of nitre, two drachms,
Water, five ounces. Mix.

In the course of the attack local treatment is not to be forgotten. If the brain be the organ chiefly affected, and after repeated blood-letting the pain and heat of head still remain, *leeches* should be applied behind the ears, or to the temples, or the patient may be cupped on the nape of the neck. The application of cold water to the head, as directed in the article on Inflammation of the Brain, will be found very beneficial ; and to reduce the burning heat of skin, the whole surface may be sponged over with vinegar and water. In the advanced stage of the disease, when the head symptoms have not been mitigated, and especially if there be a tendency to stupor and drowsiness, a *blister* should be applied to the nape of the neck. If there be much tenderness or pain over the liver or stomach, leeching or cupping is to be resorted to in the situation of these organs, and followed by blisters if the pain continue.

In the more severe cases the irritability of stomach is sometimes so great that scarcely any thing can be retained. To allay the vomiting a full dose of calomel and opium (one to two grains of opium and eight to fifteen of calomel) should be given, and repeated at intervals of three or four hours, in smaller doses, till the vomiting be checked ; at the same time fomentations of spirits of turpentine with warm water, or mustard cataplasms, are to be applied over the stomach, and if these fail it will be advisable to cover the region of the stomach with a large blister. When the stomach has been quieted, and the bowels require to be evacuated, purgative medicine in a solid form ought to be administered—*calomel* four grains, *compound extract of colocynth* eight grains, in three pills, every fourth or sixth hour ; and a Seidlitz powder may be given two hours after the pills if the stomach continue quiet. If the above should be rejected, we may succeed in opening the bowels by giving eight or ten grains of calomel with a drop of *croton-oil*, in a teaspoonful of syrup.

As soon as a remission takes place, which may be known by an abatement of all the symptoms, as already pointed out, the *sul-*

phate of quinine should be exhibited; and in hot climates although the remission be short, and not very well marked, still the opportunity should not be lost of giving this excellent medicine. Two grains may be taken at first, in a little water, or wine and water, every hour and a half or two hours; or the following:—

No. 275.

Sulphate of quinine, a drachm,

Elixir of vitriol, (aromatic sulphuric acid,) two drachms,

Water, a quart. Mix. A wineglassful to be taken every two hours.

If the bowels have not been well evacuated, an ounce of Epsom salts should be added to this mixture, but purgative medicine ought always to precede the exhibition of quinine. It ought always to be borne in mind that in administering this medicine the same dose will not answer for each individual; some persons can scarcely bear the smallest quantity, while others require it to be given in large doses to produce any decided effect; hence the safest method of employing it, is to commence with a small dose, increasing the quantity gradually until some of its usual effects on the system are felt—as giddiness, ringing in the ears, slight deafness, nervous restlessness, &c.; the medicine ought then to be left off for a time. The quantity which the system will tolerate can be thus ascertained, and the doses regulated accordingly. The exhibition of quinine must, of course, be suspended on the recurrence of febrile symptoms, and again resumed during the period of remission. For several days after the fever has entirely disappeared, it ought to be continued in gradually diminished doses. If left off too soon, a return of fever is a very probable consequence.

In tropical climates it is usual to give calomel in the more severe cases, until the mouth is affected, and the system is brought under its influence; the patient is then generally considered safe: this mode of treatment is understood to be more particularly required in the bilious form of the fever.

In the malignant form, where there is great depression from the beginning, with weak quick pulse, general blood-letting will not be borne; blood, however, may be abstracted locally, if any particular organ be much involved. The directions already given with regard to purgatives, sudorifics, &c., are applicable to this

form. In hot climates sudden sinking of the vital powers sometimes occurs; the pulse becomes weak and irregular, or is scarcely to be felt; the extremities are cold and clammy, and the body may be covered with cold perspiration; the face is pallid; the eyes sunk in their sockets; and the voice fails. When these symptoms are present, no time is to be lost in giving stimulants. Port or Madeira wine, or brandy, in sago, arrow-root, &c., or Champagne, which is the best stimulant in such cases, should be given every hour until the pulse begins to rise, and the extremities are warm; stimulants are then to be discontinued. The cold perspirations must be constantly wiped off, and the extremities rubbed with warm flannels or rough towels. To rouse the system, mustard poultices or blisters are to be applied over the stomach or to the calves of the legs. If the tongue be charged with a yellowish or brownish coloured fur, and the bowels have not been well cleared out, the following pills should be given every third hour till dejections follow:—

No. 276.

Calomel, four grains,

Quinine, two grains,

Camphor, two grains. Mix, and form into pills.

But if the bowels have been well evacuated, a quarter of a grain of opium may be added to the above prescription, and the dose of calomel reduced to two grains, discontinuing it altogether if the gums become sore. The opium ought also to be omitted if much drowsiness arise, but in these states it usually acts as a stimulant when given in small doses.

In the course of the attack the patient may be put in a warm bath when there is much restlessness, and hot, dry skin; or, at the commencement, if the extremities be cold, the pulse weak, and re-action have taken place but imperfectly, a hot bath will be of great utility. The patient's drink should consist of barley water, lemonade, soda water, tamarind beverage, &c., and if requested by the patient, cold water may be allowed, a copious draught of which we have known to bring on perspiration when other means had failed. Liquids should never be taken in large quantities if irritability of stomach be present, as they will be rejected almost immediately. In the low malignant varieties, effervescing

liquors, such as Seltzer or soda water, light beer, &c., will be useful, and are likely to remain on the stomach. The diet ought to be light and nourishing—as arrow-root, sago, panado, &c., and if the strength be much reduced, beef-tea, soups, custards, &c., should be allowed. Sometimes the vomiting is so intractable that no nourishment will remain on the stomach; in that case the patient's strength may be supported by injections of arrow-root, broths, or other nourishing fluids in small quantities. The apartment ought to be kept perfectly quiet—the evacuations are to be immediately removed, and the room sprinkled with *vinegar*, or *chloride of lime*, if the effluvia be disagreeable.

The period of convalescence is sometimes very tedious, tonic and strengthening medicines being necessary; but change of air will be found one of the best of remedies; this is particularly beneficial when the fever has ended in the intermittent form (ague), which in many cases will not yield to the usual remedies until the patient resort to change of situation.

RHEUMATISM.

Rheumatism is a painful and tedious disease of very frequent occurrence in our climate; it is seated in the tendinous, fibrous, and muscular structures of the body, but attacks chiefly the large joints—the shoulders, knees, ankles, &c.; the heart and the fibrous sac in which it is contained (pericardium), are also frequently affected.

The more immediate or exciting cause of Rheumatism is cold, especially when it succeeds an opposite state of the atmosphere, or is combined with moisture; and the system is more particularly susceptible of the injurious influence of cold when the person is fatigued, or in a heated and perspiring state. But although undue exposure to cold in some way or other, will be found to have preceded an attack of Rheumatism in by far the greater number of cases, it does not appear that this alone is sufficient to give rise to the disease, inasmuch as the instances where individuals are attacked in consequence of exposure to cold, are small indeed compared to the numbers who are constantly exposed to atmospheric vicissitudes, and to the influence of cold under all the circumstances in which it would be most likely to prove injurious,

without any disease being induced. Hence it may be inferred that cold cannot produce Rheumatism, unless the system be predisposed to it; but of the real nature of this predisposition we have no positive knowledge. Many of the best informed medical men of the day are of opinion that Rheumatism, like its kindred disease gout, depends upon a disordered condition of the blood, although the change from the healthy state which this important fluid undergoes, previous to the disease being lighted up by the influence of cold on the body, cannot be accurately ascertained. It is supposed that a preternatural accumulation of blood in the system (*plethora*), or an excess of nutritious and excrementitious matter in the blood, or the existence of these conditions united, constitute the state of the circulatory system which predisposes the body to the disease. In support of this opinion it is alleged that Rheumatism generally occurs in robust persons from fifteen to thirty-five years of age, of sanguineous temperament, and whose habits and manner of living have been such as are known to produce these changes in the circulation, and that blood drawn from the arm at the commencement of the disease, even before the local symptoms have been manifested, invariably contains a superabundance of nutritive matter (fibrine). But there can be no doubt that many of the subjects of Rheumatism are of spare habit of body, of weak constitution, and not addicted to intemperance either in eating or drinking; here it is presumed that, although these individuals do not appear to eat too much, they may nevertheless make use of more food than is really requisite; more in fact than is consistent with sedentary habits and the inactive life which they often lead, and that the blood may in consequence become too exciting, and accumulate in the vessels to a greater extent than is necessary to nourish the body and supply the waste of the system. Now in such cases, although blood may not have accumulated in the system to a great extent, it may nevertheless be in excess in reference to the deficient powers of the constitution, and also in a vitiated state in consequence of defective excretion. It would, however, be wandering out of the province which we have assigned to ourselves, to enter into detail with regard to the various doctrines which have been advanced with the intention of explaining the nature of Rheumatism. We have noticed the above opinion because it appears to be the most

rational hitherto offered, and may serve to aid the reader in understanding the principle on which the treatment ought to be conducted during the attack, and the means which should be adopted to prevent a recurrence of the disease.

Rheumatism appears under two forms—the *acute* and the *chronic*.

ACUTE RHEUMATISM OR RHEUMATIC FEVER is often preceded during several days by general uneasiness, giddiness, ringing in the ears, a feeling of weight and fullness in the head, sometimes head-ache; there may be also occasional palpitations, hurried breathing on any slight exertion, and symptoms of congestion or fullness of blood, in different organs. But these premonitory symptoms are not always observed; it frequently happens that the disease comes on suddenly, in consequence of the body having been exposed to cold and wet. In either case certain general symptoms usually precede the local inflammation. These consist in more or less severe shivering, alternating with flushes of heat, followed by quickness and fullness of the pulse, hot skin, thirst, and a sensation of fatigue in the back and extremities. After several hours, sometimes not before the expiration of a day or two, an aching or gnawing pain is felt in one or more of the larger joints, which goes on increasing until it becomes exceedingly severe, often lancinating as in gout, and greatly aggravated by the slightest movement or pressure. The affected joints become swollen, and the skin covering them acquires a rosy tint, which generally appears in patches. The fever gains ground with the increased severity of the local symptoms—the pulse becomes full and bounding, varying from a hundred to a hundred and twenty beats in a minute—the face is flushed, or pale and bedewed with perspiration—the eyes are red—the skin is hot, and occasionally covered with perspiration which emits an acid, pungent smell—the urine is scanty, and deposits a brick-coloured sediment—the tongue is white and furred, but continues moist—there is considerable thirst, and the appetite is lost. When many of the joints are affected at the same time, the patient lies on his back, and is incapable of moving, his limbs being completely disabled; the slightest movement of the body is attended with excruciating pain; the suffering is greatly increased during the night, and if sleep overtake him towards morning, he is soon

roused by some frightful dream. Sometimes the fever almost entirely subsides in the morning ; this, however, is attended with little or no mitigation of the pain ; and it is equally remarkable that no relief is afforded by the profuse sweating which frequently occurs during the progress of the disorder. The migratory character of rheumatic inflammation is another singular feature of the disease ; it often shifts its seat from one joint to another, and after some time perhaps returns to the joint originally attacked.

Rheumatism, though a painful and severe disease, is seldom dangerous unless it extend to the heart, and then the risk is greatly increased. Even in this case the immediate danger generally ceases along with the fever, but in many instances disease of the valves of the heart is subsequently induced, and gives rise to enlargement of its substance, (hypertrophy) and dilatation of its cavities, lesions which sooner or later terminate in dropsy and death. (See *Heart, Diseases of.*)

The febrile symptoms usually abate about the end of the second week ; the local symptoms then gradually diminish until they entirely disappear, or the disease passes into the chronic form.

CHRONIC RHEUMATISM. The symptoms being less severe and of longer duration, are the principal circumstances which distinguish chronic from acute Rheumatism. The general character of both these forms of the disease is the same, and the former is in many cases merely the sequel of the latter. In the chronic form the joints are more or less swollen and painful, while symptoms of general excitement are always present in a sufficiently marked degree to indicate the existence of inflammation : the tongue is white and furred, the skin is hotter and the pulse quicker than natural ; the latter, it is true, sometimes appears feeble and easily compressed, but is always in some degree increased in quickness ; and if blood be drawn from the arm, it will invariably present the buff-coloured appearance on its surface which is observed in all inflammatory diseases. Both the constitutional and local symptoms may continue, varying at times in severity according to circumstances, during a longer or shorter period, perhaps several years ; and the disease, if not checked by proper treatment, gradually undermines the patient's health, while it disorganises the joints, wastes the muscles, and renders him a cripple.

Chronic Rheumatism, after continuing a considerable length of time, may ultimately wear itself out, that is to say, the febrile symptoms may cease, and the local disease may no longer carry on its ravages in the joints. The parts which have been inflamed may remain cold, stiff, and contracted; and exposure to cold or atmospheric vicissitudes may render them painful, but Rheumatism, properly speaking, no longer exists; the patient now only labours under the morbid changes which the disease has already induced. This state requires little or no medical treatment, and ought therefore to be carefully distinguished from that above described, in which the judicious use of suitable remedies may be of the greatest service.

TREATMENT. The inflammatory nature of acute Rheumatism indicates the propriety of general blood-letting. This remedy, if it do not check, at least tends more than any other to moderate the urgency of the symptoms, and hasten convalescence. Bleeding is not to be confined to particular cases; we are not to be deterred from using the lancet because the patient is of a nervous or irritable habit of body, or because his constitution has been injured by dissipation. This measure may be employed at the commencement of the disease in all cases, both with safety and advantage. Whatever the general appearance of the patient, or circumstances connected with the case may be, the blood should be allowed to flow from the arm until the forehead is bedewed with perspiration, the lips turn pale, the pulse falters, sickness is felt at stomach, or, in a word, until the patient is on the verge of fainting. But in this, as in all other inflammatory diseases, when it is found necessary to draw blood to this extent, the patient should be in an upright position in bed while the blood is flowing from the arm. In robust individuals of strong constitution, it may be necessary to take away a large quantity of blood, perhaps from thirty to forty ounces, before a disposition to fainting is induced, while others with less energy of constitution may not tolerate the loss of half the quantity. In every case where free bleeding is practised in this manner, a decided impression is made on the pulse, which is rendered softer and less frequent. Sometimes this effect is permanent, when the operation is performed at the very onset of the disease, but more frequently the pulse becomes again, in the course of twelve or fifteen hours,

both full and hard. In the latter case the vein must be re-opened, and perhaps it may be necessary to repeat the operation a third, or even a fourth time. The repetition and extent of the bleeding must depend on the circumstances of the case—the age—the previous habits—the temperament and strength of the patient, and the intensity of the inflammation. In patients of feeble constitution the first bleeding, if carried to the extent above directed, may suffice, if followed by proper treatment; but in the more robust, it will in general be necessary to repeat the operation; and we may here remark that two full bleedings, that is to say, until a decided impression is made on the pulse, while the patient feels as if he were about to faint, will produce a much better effect at an early stage of the disease, than if twice the quantity of blood were taken from the system in smaller quantities, at intervals of twenty-four hours, in the manner recommended by many of the French physicians.

Cupping, or the application of *leeches* to the inflamed joints, may be of considerable service as an auxiliary to general bleeding, but should never be trusted to alone. If the hands and feet be principally affected, twelve or fifteen leeches, according to the circumstances of the case, may be applied to the ankles and wrists; but where many joints are suffering from the disease, local bleeding cannot be advantageously employed.

There is no difficulty in opening the bowels, even in the acute stages of Rheumatism; but this should always be done by means of the milder laxatives, administered occasionally throughout the course of the disease.

When the tongue is white and moist, which is generally the case, the action of the bleeding will be greatly assisted by the subjoined mixture.

No. 277.

Tartar emetic, two grains,
Tincture of henbane, two drachms,
Water, six ounces. Mix.

The whole to be taken in the course of the day—one or two tablespoonfuls may be given at a time.

The quantity of tartar emetic should be increased or diminished according to the effect produced on the stomach. This excellent remedy, when carefully and perseveringly administered, and in

such quantity as shall produce a slight degree of nausea occasionally, tends greatly to alleviate the pain and moderate the febrile symptoms.

If depletion measures have been freely resorted to, anodyne medicines may be given with perfect safety: the most suitable remedies of this class, in the acute form of the disease, are morphine and the extract of henbane—half a grain of the former, or five grains of the latter, may be given in the form of a pill at bed-time.

Sometimes the stomach is in an irritable state, and feels tender or painful when pressed upon; the tongue is at the same time furred in the middle, and red at the edges and point. In this case *leeches* should be repeatedly applied over the stomach (six, eight, or more each time), and no internal remedy should be employed with the exception of gum water, of which the patient may drink freely, until the irritation is removed.

In some instances the application of lukewarm poultices of linseed-meal with laudanum, or a decoction of poppy-heads to the inflamed joints, have the effect, at least to a certain extent, of soothing the pain—in other cases again, no local application can be tolerated.

Before proceeding farther, it may be well to notice, in order to condemn, the practice of applying mustard cataplasms, Whitehead's essence of mustard, strong liniments of ammonia, and other repellent remedies, to the inflamed joints, in acute Rheumatism. These stimulating applications may sometimes give relief, but in many instances they have driven the disease inwards on the heart and lungs, and caused death.

When the febrile symptoms are in a great measure subdued, the repeated application of blisters round the joints chiefly affected, often produces an excellent effect.

The above remedies, with proper attention to diet, constitute the treatment which we believe to be the most efficacious in subduing this painful disorder. With respect to diet, the patient will do well to adhere strictly to the following instructions, given by our excellent old author Sydenham. “I enjoin,” he says, “a total abstinence from flesh, and even from the thinnest flesh broths, substituting in the place barley broth, water gruel, panada and the like. I allow only small beer for drink, or, what is more

proper, a ptisan prepared of pearl barley, liquorice, sorrel roots, &c. boiled in a sufficient quantity of water." He also says, "I allow the patient to sit up some hours every day, because the heat which arises from lying always in bed promotes and increases the disease."

In the above brief description of Rheumatism, we have mentioned that the disease sometimes extends to the heart. This accident occurs most frequently when the disorder has been neglected at the commencement, or when inappropriate remedies have been employed. The time at which the heart usually becomes affected, is when the disease has reached its height, although it may be attacked at an earlier or a later period. The symptoms by which we judge that inflammation has invaded this vital organ are unusually hurried breathing, pain in the region of the heart, perhaps palpitation, and a feeling of oppression at the chest. These symptoms are to be removed by the repeated application of leeches, or cupping over the region of the heart, aided by the lowering action of the tartar emetic mixture, carried as far as the stomach will tolerate without bringing on vomiting. When these means have produced a decided impression on the inflammation, a large blister should be applied over the left side of the chest.

After the feverish symptoms have ceased, and the pain is in a great measure allayed, frequent friction of the affected parts with a hair glove or flesh brush should be employed, and the patient should begin to renew the movements of the joints: this ought to be done gently at first, gradually increasing the extent and duration of the exercise until the limbs are again prepared to perform their natural functions. If the patient, from a want of energy or from the dread of pain, neglect these salutary measures, the joints will continue stiff and painful when moved, and at length become contracted; while the muscles connected with them gradually waste, and are unfitted to perform their natural motions. It is also of the utmost importance during convalescence from Rheumatism, that the patient should pay strict attention to dietetic rules; indeed we cannot point out in too strong terms the necessity of moderation in eating and drinking. When the feverish symptoms wear off, the patient is generally left with a keen appetite, which he is but too apt to indulge; blood conse-

quently again accumulates in the system to a preternatural extent, and thus the affection is prolonged in a chronic form to an indefinite period.

Indulgence at table often brings on Rheumatism in persons who are in a debilitated state from previous illness; and here a state of plethora is likewise induced, which though only relative in degree, is nevertheless sufficient to predispose the body to the disease. Under such circumstances all that is required to produce an attack is the application of cold, whether by exposure to cold and damp weather, sleeping in a damp bed, wearing damp clothes, sitting in currents of air, or in any other way in which this cause may produce an impression upon the system.

No disease is more liable to relapse than acute Rheumatism; hence those who have been once attacked should be very careful to avoid the predisposing and exciting causes above mentioned.

For a considerable length of time after the disease has subsided, animal food should be very sparingly taken, and wine, spirits, porter, and other fermented liquors, altogether abstained from. If the patient allow his appetite to guide him in the quantity of food he should take, another attack of the disease would very probably soon convince him of his error; he should carefully guard against the erroneous idea that the free use of animal food, porter, &c. is necessary to restore the strength. A mild nutritious diet and regular exercise on foot as far as the strength will admit, are the proper means of invigorating the body, of promoting the healthy condition of its organs, and maintaining them in the due performance of their functions.

The vapour bath, followed by friction with a hair glove, or rough towels, and exercise on foot in the open air, if the weather be favourable, will be found very serviceable in promoting the healthy function of the skin, and maintaining it in that condition, which is greatly conducive to the preservation of health at all times, and more particularly beneficial in restoring health after an attack of Rheumatism, as well as in preventing the recurrence of the disease.

TREATMENT OF CHRONIC RHEUMATISM. In this form of the disease, local bleeding by *cupping* or *leeches* is often of great service; and to moderate the febrile symptoms, from a grain to a grain and a half of *tartar emetic* with from a scruple to thirty-five grains of *purified nitre*, may be taken in barley water in the course

of the day ; or ten drops of the *tincture of colchicum*, with an equal quantity of the *tincture of henbane*, may be taken in a little water, three times a day, not so as to produce purging, but merely to keep up the lowering action of the former remedy (see *Colchicum*). When the symptoms are considerably subdued by these measures, a succession of *blisters* should be applied upon and in the immediate vicinity of the affected joints. The state of the bowels is to be particularly attended to ; mild laxatives, such as equal parts of *cream of tartar* and the *milk of sulphur*, the *lenitive electuary*, *rhubarb* and *magnesia*, or the occasional use of an *enema*, may be employed when opening remedies are required. Much benefit is derived in all the forms of chronic Rheumatism, from the frequent use of the *vapour bath*. In protracted cases when other remedies have failed, the *iodide or hydriodate of potash* in the dose of three or four grains three times a day, in a little water, (see page 400), has frequently succeeded in restoring the patient to health. Small and frequently repeated doses of calomel or blue pill, administered so as to produce the general stimulant and alterative action of mercury on the system, have been followed with marked benefit in numerous instances. Indeed many pages might be filled in enumerating the various remedies and methods of treatment which have been extolled as cures for chronic Rheumatism, some of them founded on vague theoretical views of the nature of the disease, others purely empirical and not a little disgusting ; as for example, the internal use of the oil from the liver of the cod-fish, and train oil, formerly highly recommended by Dr. Percival and Dr. Bardsley.

Chronic Rheumatism frequently continues for years, uninfluenced by any kind of medical treatment, and may in fact be considered as a reproach to medical art. In numerous instances again, the best-directed treatment is frustrated by a want of self-control on the part of the patient in attending to regimen and diet. It cannot therefore be too often repeated, that the diet should be cooling, light, and nutritive, and spirituous liquors entirely abstained from—that regular exercise should be taken in the open air, and flannel worn constantly next the skin ; and we can assure the patient that unless he pay the strictest attention to these important objects, he will greatly deceive himself if he place much reliance on any kind of medical treatment.

We cannot conclude this important part of the subject without

mentioning that many Rheumatic patients after labouring under the disease for years, have been completely cured by removing to the West Indies. The free action of the skin, which a warm climate constantly keeps up, by relieving the circulatory system of redundant matter, renders Rheumatism almost unknown among the inhabitants of inter-tropical countries.

LUMBAGO is the name given to Rheumatism of the loins. This affection sometimes arises suddenly, from exposure to a current of air, from raising a heavy weight, from a sudden twisting movement of the trunk of the body, or from bathing in very cold water; but more frequently it comes on slowly, the patient experiencing a sensation of stiffness, and a dull aching pain at the back and loins, which is increased by taking exercise. The pain becomes gradually more acute, and is greatly increased by stooping, rising up, sitting down, or by any attempt at motion, and is most distressing in the evening, or during the night.

Lumbago may be confined to one side, or it may affect the loins generally, and is frequently accompanied by *sciatica* of one or both extremities.

TREATMENT. Rubbing the affected parts, night and morning for twenty minutes or half an hour each time, with the embrocation of *camphor liniment* and *laudanum* (No. 98, page 164,) will afford relief in mild cases of Lumbago. In the more severe forms of the complaint, mustard poultices (No. 23, page 33,) the turpentine embrocation (page 87), or a large blister, should be applied over the loins. But if the pain be very severe, and accompanied with feverish symptoms, the application of *leeches* to the part, or *cupping*, should be had recourse to: the bowels are to be kept freely open with *calomel* and *jalap*, and twelve or fifteen grains of *Dover's powder* should be taken every night at bed-time until the more urgent symptoms are relieved.

Friction over the loins with the hair glove or flesh brush, night and morning, and the employment of stimulating embrocations, such as spirits of turpentine, the turpentine liniment, or the following :—

No. 278.

Soap liniment, three ounces,
Tincture of Spanish-flies (cantharides), and
Laudanum, of each three drachms. Mix.

A large strengthening or stimulating plaster applied over the loins, is very serviceable in protecting the parts from cold, and sudden vicissitudes of temperature; and also from the counter-irritation which it produces.

The long-continued use of *washed sulphur* in the dose of a tea-spoonful night and morning in milk, sometimes succeeds in relieving the patient when more powerful remedies have failed. Mercury, colchicum, and other remedies, have been successfully employed; but in many cases the affection obstinately resists the most vigorous efforts of art, and distresses the patient more or less to the end of life.

When the pain is completely removed, the patient may prevent a recurrence of the disorder, by bathing the loins every morning with cold salt water, and afterwards employing friction with rough towels and the hair glove.

RHUBARB.

The best Rhubarb is the produce of Tartary, and comes to us by way of St. Petersburg and Smyrna. The Russian Rhubarb, which is the most valuable, is in small roundish pieces, with a hole in the middle of each. Its texture is dense and friable, but not hard and flinty like the East India Rhubarb. When cut it presents a lively yellow colour with red and white streaks, and its powder has a fine bright yellow colour. Excellent Rhubarb is now raised in this country, and when properly cultivated and carefully dried, is equal to the East India, and little if at all inferior to the Russian, or as it is commonly termed Turkey Rhubarb; in fact, more than half of the fine, bright yellow powder sold in the shops as "fine Turkey Rhubarb," is the produce of this country.

Rhubarb is much employed to give tone to the stomach and bowels, in doses of two or three grains twice or thrice a day; and in doses of from twenty-five to thirty grains it acts as a mild and excellent purgative. Rhubarb, besides its *cathartic property*, possesses a slightly astringent principle; hence, after its full purgative action the bowels are liable to become constipated; to obviate this it may be taken with cream of tartar, or a small quantity of jalap or magnesia, and it should be combined with

calomel when the liver is in a torpid state. The constipating effect which usually follows the purgative action of Rhubarb renders it very serviceable in diarrhoea, in cases where we have reason to suppose that the disorder is caused by offending matter lodged in the bowels. Perhaps the best medicine that can be employed to relieve common colic is an ounce of the compound tincture of Rhubarb, with twenty or twenty-five drops of laudanum. The *compound Rhubarb pill* of the London Pharmacopœia is a mild and very useful laxative medicine.—“Take of Rhubarb, powdered, an ounce; aloes, powdered, six drachms; myrrh, powdered, half an ounce; Castile soap, a drachm; oil of caraway, half a drachm; syrup as much as may be sufficient; mix the powders together, then beat the whole together until incorporated.” The usual dose is two pills of five grains each.

+ Reproduced from the original manuscript

RICKETS.

This disease is said to have been unknown in England until about the year 1720. Glisson, who published a treatise on the Rickets in 1650, states that the disease first made its appearance in the counties of Dorset and Somerset, and from thence spread to London, Cambridge, Oxford and the southern and western parts of England, and afterwards extended by degrees to the northern parts of the kingdom. It was afterwards noticed under the name of ‘the English malady,’ by several continental writers, some of whom supposed that it was introduced into the northern countries of Europe by the Jews who were expelled from Spain and Portugal; but although some curious facts have been advanced in favour of this opinion, it is nevertheless too absurd to require refutation. It certainly appears extraordinary that a disease of so marked a character has not been noticed by any of the ancient writers, but still we cannot believe it to be of modern date, since we know that the circumstances which evidently give rise to this disorder at present, must have existed in all ages.

Rickets occurs generally in children between the ninth month and the fourth year of their age, and is essentially characterised by softening of the bones. At the commencement of the disease the child is observed to be less cheerful than usual, languid and

disinclined to be amused ; the appetite is impaired, or capricious ; and the bowels are irregular. These symptoms are either accompanied from the commencement, or soon followed, by a slight degree of febrile excitement and disturbed sleep. The process of teething goes on slowly and with difficulty, and the teeth soon decay and fall out. The bones of the skull, instead of gradually closing and becoming united, separate from each other, and the head increases in size ; the belly is also enlarged ; while the limbs, more especially the thighs and legs, appear thin and wasted. After a longer or shorter period the symptoms which more particularly characterise the disease are manifested. The ends of the long bones at the wrists and ankles, and the extremities of the ribs where they join the breast bone, become swollen and knotted ; the spine is curved in the form of the italic letter S ; the right shoulder rises, the breast bone is thrust forwards, and appears somewhat like that of a bird,—hence the vulgar term ‘ chicken breast.’ If the child have begun to walk, he is now unwilling to be left on his feet, and cannot cross the room without difficulty ; the knees approach each other, the feet are turned outwards, the limbs are unsteady, and seem to yield under the weight of the body. As the disease advances the digestive organs suffer, and the urine deposits a white sediment ; the bones now begin to lose the phosphate of lime which gives them firmness, and are softened in such a manner that they bend in all directions, and the little patient is soon reduced to a shocking state of deformity, which renders him a singular though distressing object of observation.

Children affected with Rickets seldom complain much ; in some there is a peculiar expression of sadness in the countenance, which appears unnatural at their time of life ; in other cases again there is a quickness of perception, and a greater degree of development of the mental faculties, than is met with in healthy children of the same age.

Rickets does not generally prove fatal unless the disease declare itself shortly after birth, and then it almost invariably destroys life. When it appears at a later period, and proper attention is paid to the patient, the general health improves, and recovery frequently takes place, but not without leaving a raised shoulder, a hump back, or some other deformity. In females the bones of the pelvis often remain distorted, and this, in the event of preg-

nancy, necessarily leads to consequences of a more or less dangerous nature. If the disease do not give way before the patient reach his fifth or sixth year, he is doomed to be a miserable object during life, which is seldom prolonged to middle age.

CAUSES. In the higher classes of life this disease is comparatively rare, and when it does appear can generally be traced to hereditary transmission; but among the children of the working classes it is far from being uncommon, and appears to originate from the same debilitating causes which give rise to scrofula. Mothers of weak constitution and relaxed habit of body, who live on poor diet, and neglect, or have it not in their power, to take sufficient exercise in the open air, or are exposed to the long-continued influence of any of the various debilitating causes which impair the vital energies, cannot be expected to bring forth robust and healthy infants, neither is it possible that they can nurse them properly after they have given them birth. If the nurse labour under indigestion or any other chronic disease, or if she have not a sufficient quantity of milk, the infant must necessarily suffer; and moreover many mothers, more especially in our large manufacturing towns, cannot, or will not, allow sufficient time to exercise their children; the infant is allowed to lie or sit instead of being moved about in the arms; it is probably kept in an obscure, damp, unwholesome dwelling, and neither properly washed nor thoroughly clean in its clothes. Many of these helpless and unfortunate infants have rarely an opportunity of breathing a pure atmosphere; they are scarcely ever carried out into the open air, or exposed to the full light of day; and their food is often unwholesome and deficient in quantity. Rickets, says Sir Astley Cooper, is a common disease "of children in the low alleys of London, who are deprived of healthy or proper nourishment, and get scarcely any thing, perhaps, but a little gin, which their mothers give them by way of comfort, though they give them nothing to eat." The above-mentioned and other unfavourable circumstances, in the rearing of infants, induce Rickets, protracted and painful teething, scrofula, water in the head, and convulsions; and cause in our manufacturing towns an extent of mortality which is truly deplorable. In Manchester, for example, the mortality among children is much greater than in any other town in Europe.

TREATMENT. Children who have every attention paid to them are sometimes attacked by Rickets; but in the great majority of cases much may be done to prevent the disease coming on. If the child be delicate from its birth, if any individuals of the same family be rickety, if the parents be scrofulous, or if there be any other circumstances which might lead us to dread the occurrence of the disease, it will be advisable to procure a strong healthy nurse for the infant, in whom confidence can be placed, and her diet should be carefully attended to as long as the child continues at the breast, in order that her milk may be plentiful and nutritious. Chicken or mutton broth, beef tea, &c. may be allowed at an earlier period than would be proper for robust healthy children. The child should be washed daily, and the limbs frequently rubbed with a warm hand; and when the weather permits he should be carried out into the open air as much as possible, and kept clean and dry. The nurse-maid should be careful to carry the child alternately on either hand, and not allow it to remain in a slovenly way in the hollow of the arm. The child ought not to be weaned until the end of the fifteenth month, unless particular circumstances occur to render this step necessary at an earlier period.

At the commencement of the disease there is generally considerable commotion in the system, and, as we mentioned in enumerating the symptoms, the infant is feverish, and the stomach and bowels are in a disordered state. During this stage of the disease, therefore, no preparation of animal food should be allowed, the diet must be sparing, and composed of mild farinaceous substances. To correct the disordered state of the bowels, it will be proper to administer two or three grains of *calomel* occasionally, which should be followed by a little *rhubarb* and *magnesia*, or any other gentle laxative medicine. To moderate the febrile symptoms, the tepid bath may be employed; and from four to six drops of *antimonia wine*, with the same quantity of *sweet spirits of nitre*, may be given every four or five hours, or at longer or shorter intervals, according to the urgency of the case. At a more advanced stage, when the febrile excitement has subsided, tonic remedies may be given with advantage. The *tincture of steel*, in the dose of four drops, twice a day, in a little water; or the following mixture, may be administered:—

No. 279.

Sulphate of quinine, two grains,

Elixir of vitriol, six drops,

Water, an ounce. Mix. A teaspoonful to be given, as a dose, twice a day.

Two grains of *calomel*, combined with four or six grains of *rhubarb*, may be given occasionally at bed-time, if the state of the bowels authorise the use of opening medicine. Animal food, with a due proportion of stale bread or biscuit, are now to be given to as great an extent as the digestive organs will tolerate; and a little sound wine or malt liquor may be allowed. The child should be washed daily with salt and water, which may be employed tepid in winter and cold in summer; and the body should be well rubbed afterwards with a dry cloth. He should not be allowed to sleep on a bed which yields to the weight of the body. A hair mattress, or any kind of bed which is sufficiently smooth and firm, is to be preferred, and the bed clothes should be warm but not oppressive.

Various mechanical means have been invented to correct the deformity which results from Rickets, and when skilfully used are often of great service; but it must be borne in mind that no contrivances of this nature can be advantageously employed during the progress of the disease.

RING-WORM, OR SCALD-HEAD.

Ring-worm or Scald-head is a common and well-known disorder of the hairy scalp, occurring chiefly in children. It is manifested under various forms, which have been minutely described by writers on cutaneous diseases; but such distinctions, although they may be interesting to medical men, are in a practical point of view of no value, inasmuch as the essential characters of the disease are always the same, and the different appearances which it assumes are no doubt owing to some local or constitutional peculiarity.

Ring-worm usually appears in patches of an oval or circular form, each of which consists of numerous pustules of a pale yellow colour, and often so minute as not to be seen with the naked eye. These soon burst, and the thin acrid matter which they discharge forms crusts or scabs. In the course of a few days a fresh crop of

pustules break out round the patch; these burst in their turn, and the exudation increases the size of the scabs, which, if not removed by proper attention to cleanliness, become thicker, firmer in consistence, and run into each other; in this manner the disease, if not arrested in its progress, extends over the whole head, and sometimes attacks the forehead and neck. The hair appears to be affected from the commencement of the disease, and gradually falls off: the baldness thus produced constitutes one of the leading features of the disorder.

Ring-worm is decidedly contagious; it is often caught at schools by boys putting on each other's caps, using the same towels or combs, or sleeping in the same bed. "To show you," says Dr. Elliotson, "how very contagious this disease is, I may mention that a barber had a child with a Scald-head, and he kept a razor specially for shaving it. One day by mistake he shaved himself with it, and although he had washed and stropped the razor well, and had put it into hot water first, yet the disease came out upon his chin about a week afterwards. I saw it distinctly. Small circular pustules came out. You must strongly impress upon the minds of people the necessity of a child's dress being kept isolated in this affection, lest the disease should spread." When it breaks out in large schools or manufactories, it is often exceedingly difficult to eradicate.

Some authors are of opinion that Ring-worm may originate spontaneously in children of delicate constitution, who are badly fed and uncleanly. We have never met with a case which could not be traced to contagion. It is not a dangerous disease, but often offers the most obstinate resistance to every method of treatment.

TREATMENT. The first thing to be done is to shave the head, but if the disease has advanced so far as to render this impracticable, the hair is to be cut as short as possible. In the latter case, it is always advisable to wash the head repeatedly with soap and warm water, and apply warm poultices of bread or linseed-meal, to remove the scabs. When we have succeeded in this, the parts of the scalp affected should be well anointed night and morning with the following ointment, and after each rubbing the head is to be covered with brown paper.

No. 280.

Common soda (barilla or natron), three drachms,
Sulphuret of potash (liver of sulphur) the same quantity,
Lard, three ounces. Mix.

The head must be well washed with soap and water, and carefully dried with soft rags, before the application of the ointment. This is the best application for Scald-head with which we are acquainted, and when assiduously used generally effects a cure in the course of three weeks. The ointment may be made stronger if not found sufficiently active.

Kreosote ointment (see page 417) is at present much employed in mild cases, and frequently with success; it should be applied at bed-time, and the precaution above mentioned, to wash the head previously, should not be neglected.

Sometimes the patches are considerably inflamed at the commencement of the disease; in this case it will be necessary, before using the ointment, to wash the head frequently with tepid water, or a *decoction of poppy heads*, and apply emollient poultices until the irritation is removed.

Many remedies and methods of treatment have been proposed for the cure of Ring-worm, but the one discovered many years ago by two French physicians, brothers, named Mahon, is decidedly the most efficacious; it has been put to the test in some thousands of cases in the Parisian hospitals, and bears the reputation in France of being infallible. The method of treatment employed by the Drs. Mahon, which is entirely local, removes the hair from the parts affected without producing the slightest pain, and they maintain that when the disease has long existed, no kind of treatment can effect a cure unless it cause the hair to fall off. The compounds which they use consist of an ointment and a powder; these have been analyzed by M. Chevalier, a Parisian chemist, who is of opinion that they contain lime, potash, silex, alum, oxide of iron, and charcoal, but the relative proportions of these ingredients are not known. The Drs. Mahon offered to divulge the secret to the French government for an annuity to each of seven hundred louis d'or, and it is to be regretted that this proposal was not approved of; the government was willing to grant an annuity of half the above amount, but this not being considered a sufficient remuneration was rejected.

In every case the local treatment will be greatly aided by attention to diet and regimen ; the food should be light, yet sufficiently nutritious ; the feet must be kept warm ; the tepid or cold bath, or sponging the body, should not be neglected ; and in a word every means ought to be adopted to support the general health.

There is a species of this disorder occasionally met with, called *bald-scall*, which is characterised by oval or circular patches of baldness on different parts of the scalp. The denuded spots present a smooth, shining, silvery appearance, without any kind of eruption.

The treatment of this form of the disorder, consists in shaving round the bald places to the extent of an inch, and rubbing them twice a day with an ointment composed of equal parts of *sulphur*, *tar*, and *lard*. Equal parts of *oil of turpentine* and *spirits of wine*, also constitute a very successful application.

ROCHELLE SALT.

Rochelle Salt, or the *Tartrate of Potass and Soda*, was discovered in 1672, by an apothecary of Rochelle, named Leignette ; hence it was formerly called *Sal Leignetti*. It acts as a cooling, mild laxative, and is less disagreeable to the taste than Epsom or Glauber salts. It is the principal ingredient in the well-known Seidlitz powders. The dose is from three drachms to an ounce and a half.

INFUSION OF ROSES.

The Infusion of Roses is prepared in the following manner. “Take of red rose petals or leaves, dried, three drachms ; diluted sulphuric acid a drachm and a half ; sugar six drachms ; boiling water a pint. Pour the water upon the rose leaves in a glass vessel ; then mix in the acid. Macerate for four hours, and strain the liquor ; lastly, add the sugar to it.” This infusion is useful in spitting of blood, in the dose of two or three tablespoonfuls three times a day ; and is much employed as a gargle for sore throat. It is principally used as a vehicle for the administration of quinine and Epsom salts.

ST. VITUS'S DANCE, OR CHOREA.

St. Vitus's Dance is the name given to a disease which is characterised by convulsive motions of the voluntary muscles, causing remarkable grimaces and contortions, without occasioning either pain or fever. The disease is sometimes confined to particular parts, and is generally more perceptible at one side of the body than on the other.

Some old authors state that this disease was very prevalent in Swabia, towards the end of the fifteenth century, and that the inhabitants went in great numbers every year, on the first of May, to a chapel near Ulm, dedicated to a saint called by the Germans St. Weit, or St. Vitus, and by the French St. Guy, and there offered up prayers to be protected from the disease or restored to health: Sydenham mentions that they danced in the chapel like insane people, until they were completely exhausted, and from this circumstance it is supposed that the disease has been called St. Vitus's Dance.

This singular disorder generally commences slowly. Slight twitching or convulsive movements of the face and of the fingers are first observed; by degrees the lower extremities become affected in the same manner, and after some time the convulsive movements are greatly increased. As the disease advances the muscles of voluntary motion cease to be under the command of the will; the limbs are then agitated with violent and irregular movements, various muscles of the body are in constant motion, strange contortions of countenance are observed, the patient walks as if he were palsied, and cannot perform any of the ordinary occupations of the arms without moving them in an irregular zigzag manner, peculiar to the disease. There is no better description of St. Vitus's Dance than that given by Sydenham a hundred and fifty years ago. This disease, he says, is "a species of convolution, which for the most part attacks boys or girls, from the tenth year to puberty. First it shows itself by a lameness or rather instability of one of the legs, which the patient drags after him like a fool. Afterwards it appears in the hand of the same side, which he that is affected with the disease can by no means keep in the same posture for one moment; if it be brought to the breast or any other part, it will be distorted to another position or

place by a convulsion, let the patient do what he can. If a cup of drink be put into his hand he represents a thousand gestures, like jugglers, before he brings it to his mouth; for whereas he cannot carry it to his mouth in a right line, his hand being drawn hither and thither by the convulsion, he turns it often about for some time, till at length, happily reaching his lips, he flings it suddenly into his mouth, and drinks it greedily, as if designing only to make sport."

It must not however be supposed that the above will apply to all the forms under which Chorea is manifested. In many cases the involuntary motions are confined to one side of the body; sometimes the face, or only one of the limbs is affected; the muscles of the wind-pipe and tongue are occasionally attacked, and then the patient cannot articulate properly. In some instances deglutition is performed with difficulty. In fact, the disease assumes a variety of appearances according to the severity of the muscular disorder, and the number of parts affected. This disease is very liable to relapse, and has been known to recur several times in the same person; it is not dangerous, and in young persons generally terminates favourably. Although the complaint usually occurs before the age of fifteen, it may come on at any period of life. It attacks girls more frequently than boys in the proportion of three or four to one. It may continue only a few weeks, or as many months; in some cases it has been known to continue through life without having materially injured the general health.

The cause of this disease is not known; it attacks children who are pale and sickly, as well as those who appear robust. In general it is attributed by the parents to mental causes, more especially fright.

TREATMENT. If there be head-ache, drowsiness, heat of the head, or other symptoms indicating congestion or undue determination of blood to the head, the patient should be cupped at the nape of the neck, or from three to ten leeches may be applied behind the ears. If the child be full-blooded and robust, which is not generally the case, it will be preferable to draw blood from the arm. Having relieved the head, or the system generally, by the abstraction of blood, and cleared out the bowels by some purgative medicine, we are then to adopt a tonic or strengthening plan of treatment, which in most cases may be commenced with

at once; for bleeding, either local or general, is but seldom necessary. The tonic remedies commonly resorted to in this disease are the carbonate or prepared rust of iron, and the sulphate of zinc or white vitriol; the disease generally yields to either of these in the course of six weeks, but sometimes two months or even a longer period may be required, before the cure is completed. The dose of the *carbonate of iron* is from a scruple to twenty-five grains three times a day in gruel, treacle, or jelly; three times this quantity may be given with perfect safety, but in ordinary cases there is no necessity for administering very large doses. The *sulphate of zinc* may be employed at first, in the dose of a grain three or four times a day, and gradually increased to six or ten grains, or even a larger quantity, according to the state of the stomach. As this remedy is not intended to produce sickness or vomiting, it will be advisable to give each dose about half an hour after eating. In all cases where the patient is of ruddy complexion, and robust habit of body, the sulphate of zinc should be employed in preference to the carbonate or any other preparation of iron. There is no necessity for purging in this disease, but care should be taken to keep the bowels gently open, with mild laxative medicines. The cold bath was strongly recommended by the celebrated Baron Dupuytren, and ought never to be neglected. The above treatment will be greatly aided by attention to diet and regimen; the food should be light and nourishing, and exercise should be taken in fresh and open air. Sea bathing is of great service.

SAL AMMONIAC.

Sal Ammoniac or Muriate of Ammonia, although a solid substance, is composed, according to Berzelius, of equal volumes of two invisible gases, the ammoniacal gas and muriatic acid gas; when these transparent fluids come in contact, the result is the immediate formation of this salt. Europe was formerly supplied with it from Egypt, but it is now extensively manufactured in France, England, and other countries.

Sal Ammoniac is only used externally. Equal parts of this salt and powdered nitre dissolved in six or eight parts of water, form a cold lotion, which may be substituted for ice, in the

reduction of strangulated hernia. An ounce of Sal Ammoniac, dissolved in nine ounces of water, with the addition of two tablespoonfuls of spirit of wine, is an excellent discutient lotion for scrofulous or indolent tumours; but when the parts are red and painful, it is contra-indicated.

SARSAPARILLA.

The best Sarsaparilla comes from the Brazils. Many medical men consider this root as possessed of very little medicinal virtue; others extol it as a valuable remedy in syphilis, chronic rheumatism, scrofulous affections, and some diseases of the skin. In the broken-down state of the constitution which has arisen from long protracted syphilis, or from mercurial irritation, the compound decoction of Sarsaparilla prepared in the following manner is generally considered an excellent restorative, at least it is very extensively employed. Take of Sarsaparilla, sliced, five ounces; boiling water, four pints; macerate for four hours, in a vessel lightly covered, near the fire, then take out and bruise the Sarsaparilla. When bruised, return it to the liquor, and again macerate in the same manner for two hours; afterwards boil down to nearly two pints; then add sassafras, sliced, guaiacum wood shavings, and liquorice bruised; of each five drachms; mezereon, a drachm and a half; boil the whole for a quarter of an hour, and strain. A pint of this decoction must be taken in the course of the day. The powdered root may be taken to the extent of an ounce, in divided doses during the day. The fluid extract is taken in the dose of a drachm or two, three times a day; this last, Dr. Murray states in his *Materia Medica*, is a fashionable remedy, and almost an inert one. In whatever manner Sarsaparilla is taken, it must be continued regularly during several weeks.

SCAMMONY.

The milky juice of the *convolvulus scammonia* when dried is called Scammony. This gum-resin comes from Aleppo and Smyrna; that which is brought from the former place is by far the purest.

Scammony in the dose of from five to fifteen grains acts as a

strong purgative ; it is frequently given along with cream of tartar, in dropsy ; and in combination with calomel and jalap to destroy worms, and to carry off slime from the bowels of children. It enters into the composition of many of the purgative pills in general use (see page 175, No. 109).

SCARLATINA, OR SCARLET FEVER.

The best medical authors concur in the belief, that the disease known to us by the name of Scarlatina, or Scarlet Fever, was not described by the writers of antiquity, and that it is probably of modern origin. Scarlatina appeared in England towards the end of the seventeenth century, when it was first described by Sydenham ; but it is remarkable that this writer, whose descriptions of diseases have always been admired for their accuracy, makes no allusion to one of the principal phenomena connected with the disease, namely the inflammatory affection of the throat, which, at present, in a more or less severe form, almost invariably accompanies the eruption.

Scarlatina is propagated by an unknown contagious principle, and, like measles and small-pox, attacks the same individual only once in the course of his life, with the exception of some rare instances, (not more, according to the observation of the celebrated Dr. Willan, than one in two thousand cases;) these are observed only during severe epidemics, in which the contagious principle becomes so energetic, that some constitutions, although already modified by a previous attack, are unable to resist its influence. Scarlatina, like other eruptive fevers, occurs most frequently in children and young persons ; it is seldom met with in advanced life, and attacks females more readily than males. Every individual is not to the same degree liable to be influenced by the contagion of this disease, nor is every condition proper for its development. Some persons after having been repeatedly exposed to the effluvia from patients labouring under Scarlet Fever, without experiencing the slightest inconvenience, have been at last attacked in consequence of a simple communication with persons who had visited patients confined with this disease. Similar facts have also been frequently observed with regard to typhus fever.

Scarlatina is most prevalent in cold, moist climates, and although not confined to any particular season, occurs for the most part during the variable weather of spring, or in autumn, more particularly after heavy rains, following great heat. It has also been observed, that this disease is more readily developed in valleys, in cold, low, damp places, in habitations surrounded by woods, and in a word, in all localities where the atmosphere is prevented from circulating freely, than in open, well-aired situations.

Scarlatina appears under various forms; sometimes it is slight, at other times much more severe, and is not unfrequently complicated with inflammation of the lungs, the brain, or the stomach and bowels. In the worst cases the fever changes its inflammatory character, and becomes malignant or putrescent; and then the best-directed treatment often does not succeed in saving the patient. Even in the same epidemic, the disease varies much in malignity and danger. "It is truly singular," says Dr. Willan, "that the slightest of all eruptive fevers, and the most violent, the most fatal disease known in this country, should rank together, and spring from the same origin. Experience, however, decides that the simple Scarlet Fever, the *Scarlatina anginosa*, (this is a term applied to the disease when it occurs with acute sore-throat and more severe fever,) the malignant Scarlatina, (with putrid sore-throat) and the scarlet ulcerating sore-throat, without the efflorescence on the skin, are merely varieties of the one disease. That all of them proceed from the same source of contagion is evident; because under the same roof in large families some individuals have the disease in one form, some in another, about the same period."

The first or mildest form of Scarlatina commences with loss of appetite, sometimes slight nausea, but rarely vomiting, a dull heavy pain in the loins and lower extremities, and occasional chills or shiverings, which are soon followed by fever. The surface of the body becomes hot, although the feet are sometimes cold: the pulse varies from 106 to 120, in some cases it reaches 140, and the thirst is urgent. On the following day, sometimes later, the rash appears upon the skin, but its commencement is not so regular as that of other eruptive diseases; sometimes it breaks out first on the face, or on the neck, and

upper part of the chest; at other times on the trunk, or on the limbs, and spreads, in the course of twenty-four or thirty hours, over the whole surface of the body and extremities. It consists of innumerable small red points so closely set together, that the skin acquires a uniform red colour, which has been compared to that of the shell of a boiled lobster, and feels rough to the touch, more particularly at the parts where it is brightest. The rash extends to the inside of the nostrils and mouth, to the tonsils or almonds of the ears, and over all the back part of the throat. The tongue is also covered with the rash, but it generally happens that its edges and point only present a bright red appearance, the surface being coated with white mucus. The eruption in many instances is not diffused over all the trunk of the body, but is distributed in large irregularly shaped patches. The parts on which the body rests are of a bright raspberry red tint; the colour is also deeper at the folds of the joints, and is more vivid in the evening than in the morning. The skin is always intensely hot, and affected with troublesome itching. Sometimes there is considerable swelling of the face, of the throat, and of the extremities of the body, and occasionally a slight degree of delirium. The burning heat of the skin, the thirst, sickness at stomach, constipation of the bowels, and difficulty in swallowing, become less severe in some instances when the rash breaks out, but more frequently they continue until it begins to disappear.

The eruption loses its brightness and gradually diminishes towards the fifth day, and generally disappears on the seventh; the patient can now swallow with ease, and the fever has ceased. It frequently happens that perspiration or purging takes place at this time, or the urine deposits a quantity of sediment. On the seventh day the cuticle or scarf-skin begins to scale off, and this process is completed on the tenth day. In some instances the falling off of the skin is scarcely perceptible; in other cases again, it continues to separate and peel off during two or three weeks; and as long as the desquamation goes on, the patient is annoyed with a troublesome itching.

The second form of Scarlatina with severe sore throat commences with stiffness of the neck and lower jaw, and the throat is affected before the feverish symptoms are manifested; these are much more urgent than in the simple form of the disease above de-

scribed, and precede the rash during two or three days. The edges of the tongue are red, and numerous red points are seen rising through the crust with which it is covered; the uvula or pap, tonsils, and all the back part of the throat are intensely red, painful, and so much swollen, that deglutition is rendered distressing and difficult, sometimes impossible, and then, when the patient attempts to quench the burning thirst which constantly distresses him, the drink passes off through the nostrils. The breathing is more or less embarrassed, the voice is hoarse, and there is a very distressing sensation of constriction in the throat. The pulse is very quick, the skin hot, there is sickness at stomach and sometimes vomiting, great restlessness, headache, often delirium towards evening, and not unfrequently bleeding from the nose. The rash does not cover the whole body, but appears in broad irregular patches; these often vanish and again make their appearance on different parts of the body at uncertain times. The red colour of the skin is more particularly observed on the buttocks, about the loins, in the arm-pits and hams, and at the bend of the arms.

But the predominant symptom of this form of the disease is sore throat, from which it has derived the name of *Scarlatina Anginosa*. In most cases the tonsils, and back part of the throat and mouth, are covered with specks or patches of adhesive matter (coagulable lymph) of a greyish white or ash colour, which, at first sight, might be mistaken for ulceration. These little masses or patches of lymph sometimes acquire a dark brown or black colour from being mixed with blood, and formerly, when the disease was not well understood, this dark-coloured exudation was mistaken for mortification or sloughing of the throat. When the throat presents this black appearance, the tongue and lips are often, at the same time, covered with dark coloured crusts. A very tenacious tough phlegm also collects in the throat, and by inducing the patient to make frequent efforts to get rid of it, greatly aggravates his sufferings. The throat may become slightly ulcerated, but this does not generally occur.

On the fifth or sixth day of the disease, sometimes later, the inflammation of the throat and the febrile symptoms begin to subside, while the rash grows less vivid and gradually disappears. If the rash has been slight, the scarf-skin does not scale off, but

in ordinary cases it is detached as in simple Scarlatina, and desquamation often continues during two or three weeks or even longer; in the more severe cases the skin peels off the hands in large masses resembling portions of a glove.

The third or Malignant form of Scarlatina commences like the one last described, but the eruption appears at an earlier period, usually within twenty-four hours, advances slowly, and is seldom of a bright red colour; it often recedes suddenly, and reappears, and after some time the rose colour, which it first assumed, changes to a livid red hue. The pulse is very quick, varying in fatal cases from 120 to 140 even to the last moment; the eyes are blood-shot and watery, there is great heat of skin, with vomiting and oppression of the system. On the third day, or at an earlier or later period, low delirium comes on, and the pulse loses strength although it still continues exceedingly quick; the tongue is covered with a dark coloured crust, and, in a word, the worst symptoms of typhus fever are present. The throat presents the same dark brown or ash coloured appearance already described, and the breath is very offensive, but mortification or sloughing of the throat is not a frequent occurrence even in fatal cases. The soft pulpy gangrenous appearance of the tonsils and fauces arises from the exudations with which the mucous or lining membrane of these parts is covered, becoming putrid from exposure to heat and moisture. But there can be no doubt that epidemics have occurred in which the inflammation in some of the worst cases terminated in gangrene, and consequent loss of the uvula, arch of the palate, and neighbouring parts.

As the disease advances the prostration of the vital powers increases, numerous purple coloured fever spots (*petechiæ*) make their appearance, and a disagreeable odour exhales from the skin. When young children are affected with this form of the disease they lie in a state of stupor, and the pulse is so quick that it can scarcely be counted.

In malignant Scarlatina the system appears to be saturated with a peculiar poison which constitutes, as it were, the essence of the disease, and while nature is struggling to eliminate this morbid matter the patient dies: this termination often occurs on the fourth or fifth day, sometimes on the third, and in many instances death does not take place till the second or third week.

Some patients recover even when the urgency of the symptoms appeared to preclude all hopes of recovery, but in such cases the convalescence is always exceedingly tedious. When the patient dies within the first week, dissection, in the majority of cases, shows no morbid appearances that can satisfactorily explain the cause of death.

The three forms of the disease above described are essentially arbitrary, and vary only in the degree of severity; they are always liable to be modified by circumstances, which may cause one variety to merge gradually into another, and the disorder, from being slight at first, may soon become malignant.

Various affections occasionally follow Scarlatina, as swelling of the glands under the angles of the lower jaw, abscesses of the tonsils, inflammation of the ear leaving a discharge of fetid matter, sometimes deafness; but the disorder most to be dreaded is dropsy, which not unfrequently attacks the patient during the second or third week after the disappearance of the rash. Dropsy occurs oftener, is for the most part more dangerous in children than in adults, and is more frequently observed in winter than in summer. Before this affection makes its appearance the patient generally complains of depression of spirits, loss of appetite and disturbed sleep; these symptoms are soon followed by quick, hard pulse, hot skin, constipation of the bowels, scanty urine, and much restlessness. The dropsical swelling is first observed in the eyelids, it then attacks the face, the limbs, and soon extends in many cases, to the whole body. When dropsy is confined to the external parts of the body (*anasarca*) there is comparatively little danger; but when water accumulates in the belly, or in any of the internal cavities, the disease is then to be viewed in a more serious light. For the treatment of dropsy following Scarlatina see pages 231 and 234.

TREATMENT. In the first or mild Scarlatina all the treatment really necessary is to keep the patient quiet in bed, in a moderately cool apartment, to open the bowels with gentle laxatives, or emollient clysters of linseed tea with the addition, if necessary, of a little castor oil, to let him drink freely of cold water, lemonade, or any other cooling beverage, and to keep him on low diet. The disease must run its course, and nature seldom fails, when not unnecessarily interfered with, to complete the cure in

eight or ten days. But even in the mildest cases the patient should be carefully watched, and if any inflammatory action be observed, the lancet, or leeching, according to circumstances, ought to be resorted to without delay.

The second form of the disease requires more active treatment. In young robust persons, blood should be drawn freely from the arm, if there exist any symptoms of congestion (see page 171), or inflammation in any particular organ; and in children, leeches are to be applied in the manner, and to the extent, directed at page 197. In adults, if the inflammation, pain, and swelling of the throat be severe, one or two applications of twelve or fifteen *leeches* to the fore part of the neck will be found very serviceable, and the same or a greater number may be applied over the pit of the stomach if pain be felt there when pressure is made with the hand, and the necessity of this measure will be more strongly indicated if the patient suffer from nausea and frequent vomiting. If the head feel much hotter than natural, while the patient is unusually drowsy, complains of headache, and appears oppressed, leeches are to be applied freely and repeatedly to the nape of the neck, and cold water with vinegar to the head, until these symptoms are relieved (see page 75). In fact, general and local bleeding, according to the age and strength of the patient, the stage of the disease &c., constitute the means on which we are chiefly to rely, because Scarlatina, when severe, is almost always accompanied with congestion or inflammation of the brain, of the stomach and bowels, or of the chest.

The bowels are to be acted upon by mild laxatives or emollient injections; strong purgatives would be improper, because Scarlatina is frequently complicated with irritation of the mucous or lining membrane of the stomach and bowels, which would of course be aggravated by stimulating remedies. But if there be symptoms of inflammation or accumulation of blood in the brain, or lungs, or if the throat be severely affected, and no pain be felt when the hand is pressed upon the abdomen, or any other symptom which would lead us to suspect a disordered state of the bowels, we should then have no hesitation in freely employing the more active purgatives, such as *calomel* with *jalap*, or the *black draught* (page 32), in conjunction with *blood-letting*.

The intense heat of the skin, which is so distressing in this disease, the quickness of the pulse, and, in a word, all the febrile symptoms may be considerably mitigated, and the patient greatly refreshed by sponging the surface of the body and limbs with cold water or vinegar and water. Dr. Bateman, a physician of great experience, and one of our best writers on diseases of the skin, strongly advocated this practice. "We are possessed," he says, "of no physical agent, as far as my experience has taught me (not excepting even blood-letting in acute inflammation), by which the functions of the animal economy are controlled with so much certainty, safety, and promptitude, as by the application of cold water to the skin, under the augmented heat of Scarlatina, and of some other fevers. This expedient combines in itself all the medicinal properties which are indicated in this state of disease, and which we should scarcely *a priori* expect it to possess, for it is not only the most effectual febrifuge (the "febrifugum magnum," as a reverend author long ago called it), but is, in fact, the only sudorific and anodyne which will not disappoint the expectation of the practitioner under these circumstances. I have had the satisfaction in numerous instances of witnessing the immediate improvement of the symptoms, and the rapid change in the countenance of the patient produced by washing the skin. Invariably, in the course of a few minutes, the pulse has been diminished in frequency, the thirst has abated, the tongue has become moist, a general free perspiration has broken forth, the skin has become soft and cool, and the eyes have brightened; and these indications of relief have been speedily followed by a calm and refreshing sleep. In all these respects the condition of the patient presented a complete contrast to that which preceded the cold washing; and his languor was exchanged for a considerable share of vigour. The morbid heat, it is true, when thus removed, is liable to return, and with it the distressing symptoms, but a repetition of the remedy is followed by the same beneficial effects as at first."

The throat should be gargled with a solution of *alum*, and this remedy reduced to a fine powder should be employed in the manner directed under the head of Quinsey (see page 542).

During convalescence the diet should be nutritious but light, a

little plain animal food may be allowed once a day, and if there be much debility, a glass of port wine may be taken during dinner; but tonic or strengthening remedies, although sometimes serviceable, so frequently do mischief that it is better to avoid them altogether. The state of the stomach and bowels must be strictly attended to as the fever declines, and indeed until the patient has entirely recovered ; and, whenever in young and delicate persons the disease is followed by constipation of the bowels, pain, or tenderness when the belly is pressed upon with the hand, while the strength, instead of increasing, diminishes, and emaciation is observed to gain ground, it may then be inferred that chronic inflammation exists in some part of the intestinal canal, and when this insidious affection occurs as a sequel of Scarlatina, or any other acute disease, it is always to be viewed in a serious light, and the patient cannot be considered out of danger until it be entirely subdued. The tepid bath should be employed every second day, or the body should be sponged daily with warm or tepid water ; a few leeches, proportioned to the age and strength of the patient, are to be applied over the abdomen at the part where the soreness is chiefly experienced, and blood is to be taken away in this manner from time to time, until relief is afforded ; afterwards a *blister* may be applied or the *tartar emetic ointment* should be rubbed in freely over the abdomen in the manner directed at page 26. No kind of strong purgative medicine should be administered, but the bowels may be gently acted upon by means of clysters or mild doses of rhubarb and magnesia. The diet should consist of thick' gruel, barley water, preparations of tapioca, rice, sago, arrow-root, or panada.

The dropsy which often follows Scarlatina is usually brought on through exposure to cold and vicissitudes of temperature, hence the greatest care should be taken for several weeks to keep the surface of the body and limbs as nearly as possible at an equable temperature.

Treatment of Malignant Scarlatina. This form of the disease generally runs its course rapidly, and it is only at the very onset, when in the space of a few hours the symptoms assume a dangerous aspect, that blood-letting can be resorted to with safety. If the patient be robust, no time should be lost in drawing blood freely from the arm, and

leeches should be applied round the throat. Emollient clysters or mild laxatives are to be employed to open the bowels, and in children gentle emetics are to be administered in order to carry off the acrid phlegm with which the throat is generally clogged. The body should be frequently sponged with warm or tepid water. If the head be much affected and the patient become delirious, a blister should be applied to the nape of the neck, and the feet are to be covered with mustard cataplasms (see page 23). The alum should be employed as already directed, or the whole of the back part of the throat should be carefully cleaned and then moistened with a strong solution of the *nitrate of silver* (lunar caustic), twenty grains to an ounce of water ; this is to be done by means of some sponge or lint fastened to the end of a piece of whalebone or wood, and passed into the throat. The late celebrated French surgeon Dupuytren recommended a gargle composed of twelve drachms of Labarraque's chlorinated solution of soda mixed with six ounces of water, and sweetened with honey.

In this form of Scarlatina it is essentially requisite to change the patient's linen daily, and to admit fresh air freely into the room ; *chloride of lime* should also be used to correct offensive odours and prevent infection.

When Scarlatina prevails epidemically malignant cases occasionally occur, and even isolated cases are sometimes met with, in which the prostration of the vital powers is so great that strong soups, ammonia, wine, and other powerful stimulants are required to support the patient's strength and prevent him from sinking, but we have never witnessed the disease under this severe form, although we have known instances in which the putrid state of the exudations from the mucous membrane of the throat has been mistaken for eschars or gangrenous ulcers and large quantities of strong stimulants administered, a mode of treatment which is but too frequently fraught with the most disastrous consequences, and which ought never to be employed unless when directed by an experienced practitioner. Malignant Scarlatina is fortunately seldom met with ; the disease as it generally appears rarely proves fatal when judiciously treated.

The following remedy is said to have been employed with advantage as a preventive of Scarlatina—

No. 281.

Calomel, four grains,
Golden sulphuret of antimony, the same quantity,
Sugar, finely powdered, two drachms. Mix, and divide into twenty-four powders; three or four of which are to be given daily in a little jelly to children from two to four years of age.

The use of this remedy should be continued during ten or twelve days, or for a longer period if the epidemic continues severe. Belladonna has been recommended for the same purpose by Dr. Hahnemann, the founder of homœopathy (see page 204).

SCIATICA.

Sciatica is a very painful affection of the great sciatic nerve. This is the largest nerve of the body, it runs from the posterior part of the hip joint down the back of the thigh to the ham. In severe cases of Sciatica, the pain extends along the whole course of the nerve, and is so distressing during the night that the patient is completely prevented from sleeping; sometimes it is accompanied by quick hard pulse, thirst, foul tongue, and the usual symptoms of fever. In chronic cases, the patient occasionally suffers from cramp, and a sensation of tingling and numbness is felt in the limb. In long protracted cases the limb shrinks and the patient has great difficulty in keeping it warm. This affection generally arises from exposure to cold and moisture; and occurs chiefly in adults, and people advanced in life. In females it not unfrequently comes on during pregnancy, and after labour.

TREATMENT. The treatment in the acute form of the disease consists in repeated *leeching* or *cupping*, followed by warm fomentations; in frequent purging; and in the administration of twelve or fifteen grains of *Dover's powder* every night at bed-time. In less violent forms of the disorder, and in chronic cases, it will be proper to apply blisters, issues, or stimulating embrocations. (See *Rheumatism* and *Lumbago*.)

SCROFULA.

This disease is commonly called King's Evil, probably because the royal touch was formerly supposed to possess the power of curing it. The imaginary virtue ascribed to the royal touch has been traced back as far as the time of Edward the Confessor, but the circumstances in which it originated are unknown. The absurd ceremony of touching the neck for the cure of Scrofula was last witnessed at the coronation of Charles X. of France. It has not been practised in this country since the reign of Queen Anne.

This intractable disease is very common in all temperate climates ; it spares in its ravages neither age, sex, nor condition ; and there is scarcely an organ or texture of the body exempt from its influence. Scrofula, in the general sense of the term, consists of a morbid deposit, called tuberculous matter, which commonly appears in small tumours or knots called tubercles.*

The lungs are more frequently affected with Scrofula than any other internal part ; in that organ it is manifested at first in the form of numerous small tubercles, which, after remaining in a latent state during a longer or shorter period, gradually increase in size, then soften and cause incurable consumption (see page 518). The mesenteric glands through which the fluid intended to nourish the body has to pass (see page 381), are frequently the seat of tuberculous matter ; when this occurs these glands become obstructed, and greatly enlarged, producing hectic fever, disorder of the bowels, and swelling of the abdomen, while at the same time the rest of the body and limbs are greatly emaciated. Tubercles are frequently developed in the substance of the brain in children or on the surface of its membranes, and give rise to water in the head (hydrocephalus), see page 239. Dr. Gölis states that

* These bodies are of an irregularly round form, varying in size from a millet seed to a hen's egg, of a grey or yellowish colour, of firm consistence, and attached to the parts surrounding them. They form singly, or in great numbers at the same time, or they may occur in an isolated state, or in a mass, and are not organized, containing neither blood vessels, nor nerves ; they usually continue firm until they reach the size of a pea, or a small hazel nut, then become yellowish, and soften, giving rise to symptoms of a more or less serious character according to the part in which they are situated. Scrofulous or tuberculous matter may also exist in various parts of the body in an infiltrated state, as in the bones and around the joints.

when scrofulous children are attacked by slow hectic fever, the disease terminates in water of the head six times out of seven. The spleen, the spinal marrow, the liver, in a word, every organ of the body, with the exception of the heart, is liable to become diseased from the deposition of this scrofulous matter.

In early life Scrofula generally shows itself externally, and the parts most frequently attacked are the lymphatic glands, especially those of the neck, the ankle and elbow joints, and the eyes. But it would require much greater space than the limits of this volume will allow to give the reader an adequate idea of the Protean character, and the various forms which Scrofula assumes. Dr. Cullen has accurately described the disease as it appears externally, and his description is so plain and concise that we cannot do better than insert it here. "Frequently the first appearance of the disease is a thickened chapped upper lip, the thickening extending to the lower part of the nostrils. Upon other occasions, the first appearance is that of small spherical or oval tumours, moveable under the skin. They are soft, but without much elasticity. They are without pain and without any change in the colour of the skin. In this state they often continue for a time; even for a year or two, and sometimes longer. Most commonly they first appear upon the sides of the neck below the ears; but sometimes also under the chin; in either case they are supposed to affect in these places the conglobate or lymphatic glands only; and not at all the salivary glands, till the complaint is very greatly advanced. The disease frequently affects, and even at first appears in, other parts of the body. In particular, it affects the joints of the elbows and ankles, or those of the fingers and toes. The appearances above the joints are not commonly, as elsewhere, small moveable swellings; but a tumour almost uniformly surrounding the joint, and interrupting its motion. These tumours, as I have said, remain for some time little changed; and from the time they first appeared in the spring, they often continue in this way till the return of the same season in the next, or perhaps the second year after. About that time, however, or perhaps in the course of the season in which they first appear, the tumour becomes larger and more fixed; the skin upon it acquires a purple, seldom a clear redness, but growing redder by degrees, the tumour becomes

softer, and allows the fluctuation of a liquid within to be perceived. All this process however, takes place with very little pain attending it. At length some part of the skin becomes paler ; and by one or more small apertures a liquid is poured out.

"The matter poured out has at first the appearance of pus, but it is usually of a thinner kind than that from common abscesses ; and the matter as it continues to be discharged, becomes daily less purulent, and appears more and more a viscid serum, intermixed with small pieces of a white substance resembling the curd of milk. By degrees the tumour almost entirely subsides, while the ulcer opens more, and spreads broader ; unequally, however, in different directions, and therefore is without any regular circumscription. The edges of the ulcer are commonly flat and smooth, both on their outside, and their inner edge, which seldom puts on a callous appearance. The ulcers, however, do not generally spread much, or become deeper ; but at the same time their edges do not advance or put on any appearance of forming a cicatrix. In this condition the ulcers often continue for a long time while new tumours, with ulcers succeeding them in the manner above described, make their appearance in different parts of the body. Of the first ulcers, however, some heal up, while other tumours and ulcers appear in their vicinity, or in other parts of the body ; and in this manner the disease proceeds, some of the ulcers healing up, at least to a certain degree, in the course of summer, and breaking out again in the succeeding spring ; or it continues, by new tumours and ulcers succeeding them, in the spring season, making their appearance successively for several years. In this way the disease goes on for several years ; but very commonly in four or five years it is spontaneously cured, the former ulcers being healed up, and no new tumours appearing ; and thus, at length, the disease ceases entirely, leaving only some indelible eschars, pale and smooth, but in some parts shrivelled ; or where it had occupied the joints, leaving the motion of these impaired, or entirely destroyed. Such is the most favourable course of this disease, and with us it is more frequently so than otherwise,—but it is often a more violent and sometimes a fatal malady. In these cases, more parts of the body are at the same time affected, the ulcers also seeming to be imbued with a peculiarly sharp acrimony, and therefore becoming

more deep, corroding, spreading, as well as seldom healing up. In such cases, the eyes are often particularly affected. The edges of the eyelids are affected with tumour and superficial ulcerations; and these commonly excite obstinate inflammation in the adnata (membrane covering the front of the eye), which frequently produces opacity of the cornea (see page 281). When the Scrofula especially affects the joints, it sometimes produces there considerable tumours; in the abscesses following which the ligaments and cartilages are corroded, and the adjoining bones are affected with a caries of a peculiar kind. In those cases, also, of more violent Scrofula, while every year produces a number of new tumours and ulcers, their acrimony seems at length to taint the whole fluids of the body, occasioning various disorders, and particularly a hectic fever, with all its symptoms, which at length proves fatal, with sometimes the symptoms of pulmonary consumption. The bodies of persons who have died of this disease show many of the internal organs in a very morbid state, and particularly most of the glands of the mesentery very much tumefied, and frequently in an ulcerated state. Commonly, also, a great number of tubercles, or cysts, containing matter of various kinds, appear in the lungs."

No age confers complete immunity from Scrofula, but different periods of life render some organs more liable to be affected than others. The parts of the body in which the vital functions are most active, are more particularly subject to the disease. Hence, tubercles of the brain frequently occur in infancy and seldom in grown-up people, because in the former the brain is the seat of constant and strong functional action. The glands of the neck are most frequently affected during the process of teething, probably in consequence of the continued irritation about the jaws which this occasions. External Scrofula seldom originates after puberty; on the other hand, consumption, or as it may be termed Scrofula of the lungs, chiefly occurs in adults, in consequence, it is presumed, of the greater activity of the lungs at this period of life. At a more advanced age, when the digestive organs are stimulated to a greater extent and the abdomen increases in size, the liver and other organs contained within that cavity are almost exclusively the seat of the disease. Irritation of the stomach and bowels may develop scrofulous disorders of the mesenteric

glands at any time of life ; this variety of the disease however is more commonly met with in children.

Scrofula appears to be so mixed up with the very elements of existence that it has the effect of modifying the symptoms of a great part of the diseases to which the body is liable. The effects of this influence are more particularly observed when syphilis, and diseases of the eye, occur in individuals of scrofulous constitutions ; and the unmanageable and obstinate character which many inflammatory diseases acquire when modified by a scrofulous taint in the system is well known to medical men. It is also well known that wounds and other injuries of the soft parts in scrofulous people are often very slow in healing. In many chronic diseases connected with Scrofula, it is frequently found necessary to administer tonic and stimulant remedies, which, in the same diseases under other circumstances would be inadmissible.

CAUSES. We have given a brief sketch in the article on Pulmonary Consumption (see page 517) of the appearances that indicate the existence of the peculiar morbid change of the system, constituting what is termed by medical men the tuberculous or scrofulous constitution, of which the formation of scrofulous matter is merely the result ; but the nature of that change or in other words the proximate cause of the disease is unknown.

Many causes are said to give rise to Scrofula ; in fact every agent moral or physical, which depresses the energies of the system tends to develop the disease. One of the most powerful of these is, without doubt, the long-continued action of a cold moist atmosphere ; hence the disease is more prevalent in Holland, Poland, and Great Britain than in other European countries, while in many of the warmer regions of the globe it is almost unknown. The injurious influence of this cause will be greatly aided by defective or unwholesome diet, want of cleanliness, sedentary habits, living in confined situations where the atmosphere is not renewed, and the direct light of the sun is excluded.

Dr. Baudelocque, physician to the childrens' hospital at Paris, considers impure air as the essential cause of Scrofula. " Personal experience," says this writer, " reading, reflection on a great number of facts, and the analysis of many observations, have impressed me with the deep conviction that there exists one principal

cause of scrofulous disease, a cause which predominates over all others, and without which, perhaps, the disease would never, or at least very rarely develop itself. This cause consists in particular conditions of the atmosphere in which the individual resides. However ill chosen or unsubstantial his food may be—however much cleanliness may be neglected—whatever be the nature of his clothing and its adaptation to the temperature—whatever the climate in which he lives, the exercise he takes, or the duration of his sleep and waking—if the house in which he dwells be placed in a situation to which the sun's rays have free and direct access, and the house itself be sufficiently airy, light, and well-proportioned to the number of its inmates—scrofulous disease will never make its appearance. On the contrary, however well chosen and nutritious the food, however minute the attention paid to cleanliness, with whatever care the clothing be adapted to the temperature, or the duration of exercise, sleep, and waking be regulated, if the houses are so placed that the sun's rays cannot reach them, or the fresh air cannot be renewed without difficulty,—if, in short, they are small, low, dark, and badly aired, scrofulous disease will inevitably supervene.” This able author ascribes the occurrence of this disease in the higher classes of society to sleeping in confined rooms, lying long in bed, and the habit, which many children have, of sleeping with the head under the bed-clothes, or buried in a soft pillow.

Dr. Eager, of Manchester, who was formerly house-surgeon to the above-mentioned institution, where he had ample opportunity of observing the various forms of Scrofula, coincides with Dr. Baudelocque. In a well written treatise on the disease he has made the following statement. “I have questioned very attentively the parents of 74 scrofulous children, and learned that of this number, 56 lived in low houses with very small windows on the ground floor, where the direct rays of the sun never penetrated, and in which though, very small, five or six persons slept. The remaining 18 belonged to individuals in better circumstances, and, although consequently better nourished, were in every other respect in the same condition as the 56. The greater part belonged to the lower classes. They were subjected to great privations, and lived in rooms exposed to the north. These circumstances augmented the predisposition, and frequently

brought on the disease in cases where this predisposition did not exist." In a word, he says, " I am satisfied that neither cold moist air, nor too nutritious food, nor poor food, nor inflammation, suffice to induce this disease without the action of foul air and the effect of the absence of the direct rays of the sun."

There cannot be the slightest doubt that impure air and the absence of the direct solar rays exercise a powerful influence in inducing scrofulous affections ; this is shown by their greater prevalence among the inhabitants of large towns than among those who breathe the pure air of the country. The pallid countenance, the weak and inactive digestion, the want of strength, and relaxed state of the muscles, so commonly observed among the working classes in large manufacturing towns, show the injurious influence of long confinement in cotton, flax, and wool manufactories, where the temperature is high, and the air charged with dust and effluvia. The majority of London artisans are said to fall victims to consumption, brought on chiefly by close confinement in ill ventilated workshops. In Thackrah's valuable work on "The Arts, Trades, and Professions as affecting Health," the following remark relative to working jewellers is given. A master observes, " The men drop off from work unperceived and disregarded. I am quite at a loss to know what becomes of them. When they leave off working they go and are seen no more. Some, perhaps, become applicants for charities ; but so few have I known of the ages of sixty or seventy, that leaving work, they seem to leave the world as well—a solitary one appearing at intervals to claim some trifling pension, or seek admission to an almshouse." The evil consequences which result from want of fresh air and exercise, are experienced to a very great extent by the young women who are doomed to earn a scanty maintenance by working for fashionable dress-makers and milliners in the metropolis and other large towns—confined in close rooms, and constantly employed, often from fifteen to eighteen hours out of the twenty-four, the health of these unfortunate girls is gradually undermined, and nearly all those who have inherited a disposition to Scrofula fall a prey to consumption.

A vitiated atmosphere is more destructive to children than to grown-up people, and the former suffer in proportion to their youth. Sir John Sinclair declares that one-half of the children

born in London die in consequence of the impurity of the air before two years of age. "In the Lying-in Hospital of Dublin the proportion was found still greater; for, in the space of four years, ending anno, 1784, no less a number than 2,944 infants, out of 7,650, died within the first fortnight after their birth." This frightful mortality was occasioned by impure air; for when the hospital was afterwards properly ventilated the proportion of deaths was greatly reduced. Dr. Alison states that, of the lower orders of children in Edinburgh, fully a third of the deaths are from Scrofula. Observation has also shown that even some of the lower animals, when brought from the country and confined in large towns, become affected with this disease. Cows, for example, when shut up in stalls attached to dairies are often observed after a certain period of confinement to grow lean and, if not removed, gradually become thinner until they die. In such cases scrofulous matter is found in several textures of the carcass.

Many facts might be brought forward to show the powerful influence which an impure state of the atmosphere exerts in the production of Scrofula; but we cannot come to the conclusion laid down by Baudelocque, that this is the sole cause, or that it is indispensable to the development of the disease, because we see children reared in the gloomy, filthy, and ill ventilated alleys of large towns, and consequently submitted to the fullest influence of vitiated atmosphere, retaining all the appearance of health, while others enjoying the advantage of pure air, and every means considered necessary for the preservation of the health and strength of the body, perish from scrofulous disorders. Moreover in the crowded habitations of poverty and filth, where Scrofula in various forms is the source of so much misery, we find that want of pure air is but one of the many privations which debilitate the body, and render it susceptible to the impression of this and various other diseases. We also know that the debility induced by unusually protracted typhus, scarlet fever, hooping cough, &c., has often been known to bring on Scrofula in the children of healthy parents, in whom no disposition to the disease could be traced, and where every care had been taken to avoid the action of foul air, and the external agents which are generally regarded as its exciting causes. If impure air were the only cause, Scrofula would exhibit itself in warm as well as in cold climates, where as in the former, it is very

rarely met with, not even in Cairo, Bagdad, or in any of the large towns of the East Indies, or of other Asiatic countries within the tropics, where the great bulk of the inhabitants live in narrow, dirty, ill-ventilated streets, built expressly to exclude the direct rays of the sun, and breathe an atmosphere loaded with a thousand and one impurities, the odour of which is at times so offensive as to be almost intolerable to strangers. But although the natives of warm climates are almost exempt from scrofulous affections when at home, they nevertheless suffer greatly from them, when subjected to the influence of the cold moist and variable climate of this, and other European countries. Even the lower animals imported into Great Britain from warm climates become affected with Scrofula; this has been more especially observed in monkeys; nearly all of those confined in our menageries die from tuberculous diseases. We see the influence exercised by climate over this disease in the aggravation of the symptoms during the spring and winter seasons, whereas in the summer months, on the contrary, it may generally be observed that scrofulous sores improve or disappear altogether. In concluding this part of the subject, it may be stated, as a generally received opinion among medical men, that all external agents, all circumstances, in fact, which are known to have the effect of reducing the energies of the system below the natural standard, more especially when conjoined with atmospheric humidity and cold, are to be considered as exciting causes of Scrofula. It is also generally understood that the children of scrofulous parents, under whatever circumstances they may be placed, are more liable to the disease than the children of healthy parents in parallel circumstances.

Individuals with fair complexion, light hair, blue eyes, &c., in whom the lymphatic temperament prevails, are more frequently affected with Scrofula than those of other temperaments; but when it occurs in persons of a dark complexion and sluggish temperament, it is more inveterate and intractable than under other circumstances. Scrofula is not contagious, neither can it be communicated by inoculation.

TREATMENT. Being aware that delicate children and the offspring of unhealthy parents are more particularly subject to Scrofula, and knowing the obstinate and opprobrious nature of the disease, and the fatal consequences which often accrue when it

attacks important organs, it must be obvious that the prevention is of more consequence than the curative treatment; indeed the latter, in as far as regards the use of medicine, is generally acknowledged to be very uncertain. The objects then to be held in view in conducting the preventive treatment, are to protect the child from the external agents which are regarded as the exciting causes, and at the same time to counteract, as far as lies in our power, the debility which predisposes the system to the disease.

Our limits will not allow us to notice in detail the various means recommended to prevent the development of the disease in children predisposed to it; but we may say with the celebrated philosopher, Hunter, "let an infant have plenty of sleep, plenty of milk, and plenty of flannel;" these, when conjoined with plenty of pure air, are the principal objects in domestic treatment to be observed during infancy, and should be strictly attended to, from the very first hours of birth.

The cold bath is improper for newly-born, or very young children; this is a part of the hardening treatment which some authors so strongly recommend, and in robust infants may be salutary; but in the delicate and those in whom there is reason to suspect a disposition of Scrofula it increases the debility, and may lead to very injurious consequences. The cold bath however agrees well with many children; this is evinced by their soon becoming warm and appearing lively after being taken out of the water, whereas in others it has an opposite effect; they continue chilly and pale for some hours afterwards, and the faculties of the body appear, as it were overpowered. But although cold bathing is generally inadmissible, washing the body with warm or tepid water is necessary, not only with respect to cleanliness, but also to promote the healthy functions of the skin.

As the child grows up, constant care is required in regulating the diet; this should consist principally of animal food taken at regular intervals, but never in such quantity as to overload the stomach. "I advise (says Sir Astley Cooper) that children should breakfast between eight and nine, and take an egg or a little meat at this meal. They should have a sandwich about twelve or one o'clock, and meat with their dinner at three. It is right that they should drink with their dinner, although water is a bad beverage; some good beer, or a glass of wine, should be allowed."

Dr. Cumin, of Clifton, states that "a very nourishing food may be prepared by boiling a small bag filled with suet in cow's milk. We have (he says) made trial of it on the recommendation of Dr. Paris, and found it to answer remarkably well in cases of scrofulous marasmus when almost every other article of diet caused irritation of the bowels and passed through undigested. It bears a strong resemblance to goat's milk, but has the advantage of being more astringent."

All healthy children have a natural desire for exercise. This propensity appears to be as strongly implanted in them as in the young of the lower animals, and is wisely ordained by nature; for there is nothing more conducive to the digestion of the food, the circulation of the fluids, and the health and growth of the body, than free and active motion of the limbs. To scrofulous children, or those who have a predisposition to the disease, plenty of exercise is indispensable, and should always be taken in the open air when the weather is fine, otherwise they should be allowed to play in a large well-aired room. A judicious writer of the last century, Dr. Cheyne, speaking of the advantage of exercise to children, says: "'Tis beautiful to observe the earnest *desire* planted by *nature* in the young persons to *romp, jump, wrestle, and run*, and constantly be pursuing *exercise* and bodily *diversions* that require labour even till they are ready to drop down, especially the healthier sort of them, so that sitting or being *confined* seems to be the greatest *punishment* they can suffer; and imprisoning them for some time will much more readily correct them than *whipping*. This is a wise contrivance of nature, for thereby their joints are rendered *pliable* and *strong*, their blood continues sweet and proper for a full circulation, their perspiration is free, and their organs stretched out by due degrees to their proper extension."

Without the assistance of pure country air, children are not likely to derive much benefit from any other means. We ought therefore to make choice, as far as lies in our power, of a dry and temperate atmosphere, untainted with exhalations and known by experience to be salubrious; and sudden extremes of heat and cold should be avoided as much as possible. The value of sea air is very generally acknowledged. The best time to reside on the sea coast is during the summer months in the latter part of spring

and beginning of autumn ; and when the weather is dry and warm, which is the only time that benefit is to be derived from the air of the sea side, children should be allowed to amuse themselves on the beach during the greater part of the day. Sir Astley Cooper states that it is a mistake to suppose that the air of the coast in the wet and cold seasons is of any advantage to scrofulous children.

Sea bathing, when judiciously managed, is one of the most valuable remedies that can be employed in scrofulous disorders. In delicate children the sea water should be used warm at first, then tepid, reducing the temperature by degrees until the system is prepared to withstand the shock of immersion in the open sea. On our coasts the sea is warmest in July and August, being then generally about 63 deg. Fahrenheit.

Dr. A. P. Buchan, in his "Treatise on Sea Bathing," mentions a fact of considerable importance to invalids, namely, that by bathing during warm weather about noon or within an hour or two afterwards, in a flowing tide rising on a sandy beach, they have it in their power to use a bath ten or twelve degrees warmer than at a more early hour in the morning, or than at low water. He ascribes this to the sand acquiring heat from the sun during the forenoon, and then parting with it to the water as the tide rises.

All scrofulous people of delicate constitution, and those affected with chronic diseases, should wear flannel constantly next the skin ; this is the best safeguard in protecting the body from the injurious influence of our damp and variable climate ; and although it may be worn of a thinner texture during the warm weather, should never be entirely thrown off. Flannel gently stimulates the skin, promotes the insensible perspiration, while it absorbs the moisture as it is thrown out, and tends greatly, under all circumstances, to keep up an equable temperature ; this last is an object of much importance when we consider the great and often sudden vicissitudes of temperature to which our climate is subject. Even in the months of July and August, the thermometer sometimes varies thirty degrees in the course of twenty-four hours, and the average daily variation throughout the year is very considerable, as may be seen by the following table. "The most usual variations of temperature within the space of twenty-four hours in every month are—

| | | | |
|----------------|------------|-----------------|-------------|
| January . . . | 6 degrees. | May | 14 degrees. |
| December . . . | 6 " | October | 14 " |
| February . . . | 8 " | August | 15 " |
| November . . . | 9 " | April | 18 " |
| July | 10 " | September . . . | 18 " |
| June | 12 " | March | 20 " |

thence the origin of vernal and autumnal colds." (Kirwin.)

Sydenham observes, that the giddy practice of throwing aside our winter garments too early in the spring, and of exposing our bodies, when overheated, to sudden colds, has destroyed more than famine, pestilence, and sword.

Much depends in counteracting the disposition to scrofulous maladies, upon the management of childhood. If the physical education of early life is of the utmost importance, the moral training, even from the earliest dawn of reason, also demands the strictest attention. Parents should commence early to discipline the minds of children and train them to habits of obedience, for on this their future health in a great measure depends. How often do we see that those who have been overindulged and pampered when children, are unable in after life to control their appetites and passions, and thus cause the disease to be lighted up in the lungs, when it otherwise might have remained quiescent or inactive during a long life-time. Parents whose children are delicate should look well to this, for it is of more importance than many seem to think, or are willing to admit; they will act wisely in following the advice of a celebrated phliosopher, and "gradually instil into their children that great principle of all virtue and worth, *viz*, to deny themselves their own desires, and purely follow what reason dictates as best, though the appetite should lean the other way. We frequently see parents, by humouring them when little, corrupt the principles of nature in their children, and wonder afterwards to taste the bitter waters, when they themselves have poisoned the fountain; why should we think it strange, that he who has been accustomed to have his will in every thing when he was in coats, should desire it, and contend for it, when he is in breeches." (Locke.)

A great variety of drugs have been employed in the treatment of Scrofula, but they are all of secondary importance in comparison with the means above recommended. The remedy prin-

cipally used at present, and which is generally understood to possess a greater influence in overcoming scrofulous affections than any other medical agent hitherto discovered, is *iodine*.

No. 282.

Iodine, one grain,
Iodide or hydriodate of potash, two grains,
Distilled water, eight ounces. Mix. To a child under seven years of age a dessert spoonful of this mixture is to be given three times a day in half a teacupful of water sweetened with a little sugar.

The dose should be gradually increased to two tablespoonfuls, and the remedy is to be continued, if no untoward symptoms occur, for a period of four or five weeks; its use is then to be suspended, and gentle laxatives are to be administered, such as the powder No. 3. After an interval of a fortnight the mixture is to be again administered, commencing with a dessertspoonful, and gradually augmenting the dose as before. At the expiration of a month the remedy is to be again discontinued, and again renewed. In this manner iodine may be employed with perfect safety, and continued until the cure is accomplished.

In pale debilitated children, Dr. Baudelocque strongly recommends the iodide or hydriodate of iron; half a grain of this remedy is to be given at first in two doses dissolved in water, increasing the quantity by degrees until three grains be taken daily. Some medical men give twice this quantity, but M. Lugol, of Paris, and the physician above referred to, have clearly demonstrated that the safest and most effective method of administering all the preparations of iodine is in small doses at regular intervals, and steadily continued for a considerable length of time (see Iodine, page 399). For adults the following formula will be found convenient—

No. 283.

Iodine, ten grains;
Iodide or hydriodate of potash, twenty grains. Mix. From four to twelve drops to be taken in a glass of water three or four times a day.

During the internal administration of iodine, the following ointment may be employed externally—

No. 284.

Ioduret of lead, a drachm,
Lard, an ounce. Mix. About the size of a nutmeg, or a larger or smaller quantity according to the bulk of the swollen glands, is to be rubbed in every night during six minutes.

In adults it should be applied in this manner twice a day. This ointment, spread on soft linen or lint, is also an excellent application to scrofulous sores.

Whether Scrofula be only commencing, or already confirmed, Dr. Gölis, a very high authority in diseases of children, gives in all cases the following powder—

No. 285.

Gum guaiac, half an ounce,
Iron filings, half a drachm,
White sugar, half a ounce. Mix.

Of this powder a pinch, larger or smaller, according to the age of the child, is given twice a day, and continued for a considerable length of time. If feverish symptoms supervene the remedy is to be discontinued for a time. He also employs a tepid bath three times a week, and prescribes a diet of broth and milk.

In scrofulous eruptions of the skin Dr. Gölis gives the above powder in the same doses, substituting a scruple of *Æthiop's mineral* for the iron filings, and orders *wild pansy tea* for drink.

Round red tumours sometimes form in the fingers and toes, or in the feet and ankles; these frequently open and portions of bone are discharged from time to time. In such cases, Dr. Gölis deprecates the use of stimulating applications, and prescribes emollient fomentations and poultices; and internally the iron filings, &c., as above directed; he also recommends coltsfoot tea, a remedy which was much employed by Dr. Cullen in scrofulous affections. He is of opinion that the best application for a simple scrofulous sore is to sprinkle the surface with equal parts of finely powdered charcoal and rhubarb.

We have already noticed under the head of Abscess (see page 4), the treatment which ought to be adopted in scrofulous swelling of the glands of the neck; we there pointed out the advantage of opening these glandular tumours as soon as matter can be de-

tected, and before the skin becomes discoloured. When this precaution is neglected, and the abscess is allowed to burst spontaneously, the part in most cases heals very slowly, and may continue running for months, or even years, although compression, injecting the cavity with astringent solutions, and the most careful attention to dressing the sore, have been long and steadily persevered in. Now, in such cases, when the diseased glands have been entirely discharged by suppuration, and no induration is left, it will always be found that the skin is thin, discoloured, in a word, unhealthy, and not in a condition to unite with the parts under it. The treatment here consists in removing the skin, which may be easily done by means of the following preparation—

No. 286.

Caustic potash, six scruples,
Quick lime, five scruples. Rub the potash in an iron mortar, then add the lime by degrees until both are reduced to a fine powder.

A larger or smaller portion of this powder, according to the extent of surface to be covered, is to be mixed with spirit of wine, and formed into a paste about the thickness of a penny, or thicker if requisite. This is to be placed over the part, and allowed to remain during six minutes; it is then to be removed, and the skin will be found destroyed to a depth corresponding to the thickness of the paste. The cause which prevented nature from accomplishing the healing process being now removed, the part heals readily, without leaving a puckered cicatrix. This method of treatment is employed at the childrens' hospital in Paris, and is found very efficacious, safe, and easily managed.

Scrofulous ophthalmia is noticed in the article on Diseases of the Eye (see page 292); and for the treatment of scrofulous enlargement of the abdomen in children we must refer the reader to the article on *Tubes*.

In conclusion, we must remind the reader, that Scrofula can never be cured rapidly, inasmuch as it is the result of a morbid change affecting the entire organization of the body, induced by the long continued influence of one or more of the causes above enumerated; and we repeat, that the best means, not only of preventing, but of controlling and removing this obstinate dis-

order, are proper diet and clothing ; pure, dry, and warm air ; and regular exercise. It must also be borne in mind, that though the medicines above mentioned are of the greatest service, it is only when they are employed with steady and patient perseverance, aided by the strictest attention to the rules requisite for the improvement of the general health.

SCURVY.

"The Scurvy," says Sir John Floyer, in his work on Cold Bathing, "is a new name for the old disease described by Hippocrates under the name of Great Spleen, in which the gums were corrupted, and the breath smelt fetid; and if no hemorrhages happened, nor the mouth had an ill odour, the disease affects the limbs with ill ulcers and spots on them." Pliny speaks of an epidemic that broke out in the Roman army under Germanicus, which appears to have been Scurvy; indeed, this disease, though not accurately described, seems to be referred to by several of the ancient authors. That Scurvy existed previously can scarcely be doubted, when we consider that it arises from causes which must have operated at times in all ages and countries; but whether it be of comparatively recent date, or had existed in remote times, is a question not likely to interest the non-professional reader, nor, indeed, can any deductions of practical value be drawn from it.

The first accurate account of Scurvy which has been handed down to us, is that by Joinville, who witnessed its ravages in the Christian army in Egypt, during the crusade under Louis the Ninth, in 1260. Vasca de Gama, who first sailed to the East Indies by the Cape of Good Hope, in 1497, gives us the earliest description of sea Scurvy. In the narrative of his voyage it is stated, that about one hundred out of one hundred and sixty of his men, were destroyed by this malady. Sir R. Hawkins mentions in the account of his voyage to the South Sea, in 1593, that he could give an account of ten thousand seamen carried off by Scurvy in the course of twenty years. In 1726, Admiral Hosier, in a voyage to the West Indies with seven ships of the line, buried his crews twice over, and then

died himself of a broken heart. Lord Anson, in 1741, lost half his crew from this disorder in six months, and within two years, four out of five of the crews of the different vessels composing the expedition under his command, fell a prey to it. Even as late as 1780, Scurvy prevented the Channel Fleet from remaining at sea longer than ten weeks ; it prevailed to such an extent, that 2,500 of the crews were sent into port completely crippled. In fact, until the year 1796, the mortality in our navy was truly frightful, and contrasts in a striking manner with the almost complete immunity from the disease enjoyed by our seamen at present. This proceeds, no doubt, from the better victualling of our vessels of war, our improved knowledge, and greater attention in preserving the health of sailors. It is to Captain Cook that we are indebted for teaching us, that human life can be rendered as secure from disease on board of ship as on shore. This celebrated navigator lost only one man (and he had been previously sickly) in a voyage round the world of three years duration. Formerly our troops sometimes suffered severely from Scurvy ; but this appears always to have arisen from neglect or ignorance of the rules of hygiene. This important branch of military economy was brought to comparative perfection during the last war, under the wise management of Sir J. M'Grigor, the director of the medical department of the army, who has perhaps done as much in preserving the health of the soldier as Sir Gilbert Blane did towards the end of the last century in preventing disease in the navy. Sir W. Herschell says, "At present the Scurvy is almost completely eradicated. In the navy, partly no doubt from an increase and increasing attention to general diet, but mainly from the constant use of a simple and palatable beverage—the acid of lemon, served out in daily rations. If the gratitude of mankind be allowed on all hands to be the just meed of the philosophical physician, to whose discernment in seizing, and perseverance in forcing it on public notice, we owe the great safeguard of infantile life, it ought not to be denied to those whose skill and discrimination have thus strengthened the sinews of our most powerful arm, and obliterated one of the darkest features in one of the most glorious of all professions."

Scurvy evidently arises from a depraved state of the blood, caused chiefly, if not altogether, from want of fresh animal and

vegetable food. The blood, when in a natural state, stimulates and nourishes every organ and structure of the body; but when this vital fluid is altered in quality, it is no longer capable of fulfilling the purpose for which it is destined, and the whole animal economy suffers in consequence. The first symptoms which announce this morbid change in the circulation, are general weakness, disinclination to move about, great lassitude after any ordinary bodily exercise, dull heavy pains in the back and limbs, great depression of spirits, disturbed sleep, weak and frequent pulse, loss of appetite, slow digestion, cold dry skin, hurried breathing, and palpitation of the heart on walking a little quicker than usual, or from any other bodily exertion. A sailor, for example, on going aloft experiences the two last mentioned symptoms, along with a sensation of giddiness, and a feeling as if he were about to faint.

This stage of the disease often continues a considerable length of time, and is at first little noticed; but at last the signs, which more particularly characterise the disease, make their appearance. The skin, which is at first unusually pale, gradually assumes a dingy yellowish hue, the face looks puffed or bloated, the gums become swollen, dark, red coloured or livid, spongy, and bleed from the slightest friction. As the disease advances the teeth loosen, the gums ulcerate; fungous excrescences shoot up from the ulcers, and the breath acquires an exceedingly offensive smell. The urine also emits a peculiarly disagreeable rank odour, and appears muddy and high coloured. While the gums become gradually affected in the manner above described, dark coloured spots at the same time make their appearance on the calves of the legs, on the thighs, sometimes on the arms and back, rarely on the face; these run into each other, and form large blotches of a yellowish greenish, or livid colour, similar to the marks which follow bruises or blows. The small, round, purple coloured spots, and the large, discoloured, bruise-like patches are most frequently seen on the lower extremities, and both are the consequence of effusion from the blood-vessels. Ulcers in many cases form on the legs, and soon present an appearance peculiar to Scurvy; the edges of the sore are of a purplish colour, and appear as if inflated; a thin acrid fetid matter is at first discharged; but as the disease advances, a dark

coloured covering of coagulated blood is deposited upon the surface of the ulcer, which is not easily removed, and is soon replaced by a similar coagulum. The surface of the sore, under this dark coloured mass, is soft, putrid, and spongy, like the gums, and bleeds from the slightest cause. As the disease gains ground, the knee-joints contract, the hams become swollen, hard, and painful; and in two cases we have seen, the calves of the legs were hard like a piece of wood, so that the skin covering them could not be pinched up between the finger and thumb. In most cases the nostrils bleed occasionally, and blood is discharged from the bowels. Such are the symptoms of Scurvy as we have observed them on board of ship in northern latitudes; all of which vanish in a surprisingly short time when the natural remedies—vegetables and fresh animal food—can be procured.

We have never seen the more advanced stages of the disease, as described in the last century by Lind, Trotter, Blane, &c., in which the legs are dropsical, and the ulcers present a soft, bloody fungus growing from their surface, which is described as attaining considerable size, and resembling *bullock's liver* (when boiled) in colour, as well as in consistence. Lind states that this “often rises in a night's time to a monstrous size, and although destroyed by cauteries, actual or potential, or cut smooth with a knife, in which case a plentiful hemorrhage generally ensues, at the next dressing it is as large as ever.” This author also mentions frequent discharges of blood from the stomach, lungs, bladder, &c., great difficulty of breathing, pain under the breast-bone, frequent fainting fits, and when the disease is approaching a fatal termination, involuntary evacuations from the bowels; and weak, quick, and intermitting pulse. It has also been observed, that wounds which have been long healed break out afresh. In confirmation of this, a remarkable case is mentioned in the account of Lord Anson's voyage. One of the marines on board the Centurion had been wounded fifty years before at the battle of the Boyne—“ His wounds soon healed, and had continued well for many years, when, in the progress of Scurvy, they broke out afresh, and seemed as if they had never been healed; nay, what is still more extraordinary, the callus of a broken bone, which had been completely formed for a long time,

was found to be hereby dissolved ; and the fracture seemed as if it had never been consolidated."

Towards the termination of the disease one of the most remarkable symptoms is the tendency to swooning on any bodily exertion ; this has been noticed by nearly all the writers on Scurvy. It has also been observed that the appetite for food generally continues to the last. " Many of our people," says Mr. Walter, in the Narrative of Lord Anson's Voyage, " though confined to their hammocks, ate and drank heartily, were cheerful, and talked with much seeming vigour, and in a loud strong tone of voice ; and yet, on their being the least moved, though it was only from one part of the ship to another, and that in their hammocks, they have immediately expired ; and others, who have confided in their seeming strength, and have resolved to get out of their hammocks, have died before they could well reach the deck. And it was no uncommon thing for those who could do some kind of duty, and walk the deck, to drop down dead in an instant, on any endeavours to act with their utmost vigour ; many of our people have perished in this manner during the course of the voyage."

CAUSES. The grand cause of Scurvy is the want of fresh animal and succulent vegetable food, more especially of the latter ; and the disposition to the disease from this cause is no doubt greatly promoted by long exposure to a cold damp atmosphere, fatigue, long continued watching, deficient exercise, mental distress, and, in a word, all the debilitating causes which depress the powers of life. Scurvy was formerly a very prevalent and fatal disease in this country ; in the seventeenth century nearly a hundred people died from it annually in London. This was owing principally to the want of vegetable food. The inhabitants eat salted meat, with few or no vegetables, through the whole year. " It was not," says Hume in his History of England, " till the end of the reign of Henry the Eighth that any salads, carrots, turnips, or other edible roots, were produced in England. The little of these vegetables that was used, was formerly imported from Holland and Flanders. Queen Catherine, when she wanted a salad, was obliged to dispatch a messenger thither on purpose." At present there is no large town in the world better supplied with good vegetables than London,

and Scurvy is consequently a disease very seldom met with. When it occurs in the country it is generally among the very poorest people from want of food.

TREATMENT. Such is the power which we now possess in preventing Scurvy, that many surgeons of the British navy of long standing have never seen a case of it. But the crews of our merchantmen during long voyages often suffer severely from this disease, in consequence of being obliged to live on unwholesome food; from this cause alone many valuable lives are annually lost. Hard bad beef, and worse biscuit, constitute the only food which the sailors in some vessels are allowed for weeks together. The biscuit is often so hard, that it cannot possibly be masticated without previously soaking it in water; and is sometimes not much better than that served out to the men in the expedition to Carthagena, which Smollett described as being like a piece of clock work, moved by its own internal impulse, occasioned by myriads of insects that dwelt within it.

The means to be adopted in order to preserve the general health of seamen, and, consequently, to prevent Scurvy, consist in wholesome food, that is to say, the articles of victualling generally used on board of ship should be sound, and of good quality—in an abundant supply when in port of fresh animal and vegetable diet, more especially of succulent vegetables and fruit—in a plentiful supply of lemon juice, without which no vessel should ever proceed on a distant voyage—in personal cleanliness, exercise, and cheerfulness—and in strict attention to ventilation, cleanliness, and dryness of the ship.

Lemon or lime juice, in the absence of fresh vegetables or fruit, is now admitted on all hands to be the best preventive of Scurvy, and also the best remedy after the disease makes its appearance. This juice is preserved by mixing a tenth part of brandy with it. The present navy allowance of lemon juice to each man is one ounce, with an ounce and a half of sugar, which is served out every morning after the ship has been a fortnight at sea. The first account we have of the use of lemon juice in Scurvy, is in a curious old work by John Woodall, surgeon of St. Bartholomew's Hospital, published in 1636, entitled the Surgeon's Mate or Military and Domestic Medicine. "And further experience," says the author, many of whose observa-

tions are very judicious, "teacheth which I have oft found true, that where a disease most raigneth, even there God hath appointed the best remedies for the same grief, if it be his will they should be discovered and used: and note for substance, the Lemmons, Limes, Tamarinds, Oranges, and other choice of good helps in the Indies which you shall finde there do farre exceed any that can be carried thither from England, and yet there is a good quantity of Juice of Lemmons sent in each ship out of England by the great care of the Marchants, and intended onely for the relieve of every poore man in his neede, which is an admirable comfort to poor men in that disease: also I finde we have many good things that heal the Scurvy well at land, but the sea Chirurgeon shall do little good at sea with them, neither will they indure. The use of the juyce of Lemmons is a precious medicine and well tried, being sound and good, let it have the chiefe place, for it will deserve it, the use whereof is: It is to be taken each morning, two or three spoonfuls, and fast after it two hours, and if you adde one spoonful of *Aquavita* thereto to a cold stomack, it is the better. Also if you take a little thereof at night it is good to mixe therewith some sugar, or to take of the syrup thereof is not amisse. Further note it is good to be put into each purge you give in that disease. Some Chirurgeons also give of this juice daily to the men in health as a preservative, which course is good if they have store, otherwise it were best to keep it for need. I dare not write how good a sauce it is at meat, least the chiefe in the ships waste it in the great Cabins to save vinegar. In want whereof use the juice of limes, oranges, or citrons, or the pulpe of tamarinds." In another part of the work he remarks, "And generally note that bitter and sower medicines prevail most to the cure of this griefe, amongst which you have that are approved good thereto, those that follow as chiefe, juyce of lemmmons, of limes, of citrons, and oranges." In like manner, the juyce or pulpe of tamarinds hath a great acetositie, and is found a precious remedy against the disease."

Another excellent and cheap remedy, though inferior to lemon juice is *sour krout*, which "is prepared by slicing the soundest and most solid cabbages in the way cucumbers are used in this country. In this state they are put into a barrel in layers, hand

high, and over each is strewed a handful of salt and caraway seeds ; in this manner it is rammed down, stratum super stratum, till the barrel is full, when a cover is put over it, and it is pressed down with a heavy weight. After standing for some time in this state, it begins to ferment, and it is not till the fermentation has entirely subsided that the head is fitted to it, and the barrel is shut up and prepared for use. Vinegar, as some have supposed, is not employed in its preparation." (Dr. Kerr.)

The preparation of oatmeal, well known in Scotland under the name of *sowens*, has been proved to be very efficacious both in preventing and curing Scurvy. This farinaceous jelly was strongly recommended by Sir Gilbert Blane, who considered it as ranking next to lemon juice as an antiscorbutic. It is prepared by putting some oatmeal into a wooden vessel, pouring hot water upon it, and allowing it to stand for two or three days in a place moderately warm until the liquid ferments and becomes sour. The liquid is then removed from the grounds and boiled to the consistence of a jelly—it may be sweetened with raw sugar and flavoured with a little cinnamon.

When no lemon juice could be procured, we have seen good effects result from the use of an ample daily allowance of *molasses* and *vinegar*.

Captain Cook had a high opinion of the antiscorbutic virtue of *malt*. Of this he gave an infusion (" sweet wort") not only to the men who were affected with Scurvy, but to those who were considered most liable to it.

Nitre, elixir of vitriol, lime water, and a great variety of medicines have been employed in Scurvy ; but they are all insignificant in comparison with fresh succulent vegetable juices, as lemon juice, &c., and it appears questionable whether they ever produce any good effect.

All the best writers on Scurvy disapprove of blood-letting. " It is to be observed," says Lind, " that this disease, especially when advanced, by no means bears bleeding, even although the most acute pains upon the membranes, a high degree of fever, and dangerous hemorrhages would seem to indicate it. The patient generally dies soon after the operation. Nor does it bear strong purgatives, which are often injudiciously administered in its commencement. From blisters there is danger of a gan-

grene (mortification). "Persons," continues this author, "in the advanced stages of Scurvy are not, without great caution and prudence, to be exposed to a sudden change of air. On such an occasion they are to be given a glass of generous wine wel acidulated with lemon or orange juice, which is likewise the best cordial in their fainting fits. The sloth and inactivity belonging to the disease are not to be mistaken for wilful idleness. This has proved fatal to many, some of whom, when obliged by their officers to climb up the shrouds, have been seen to expire and fall from the top of the mast. After a long abstinence from green vegetables and fruits, scorbutic persons should be treated like those nearly starved to death; that is, not permitted for a few days to eat voraciously, or surfeit themselves; otherwise they are apt to fall into a dysentery, which often proves fatal."

Scorbutic patients are sometimes much troubled with constipation of the bowels; when this occurs, *castor oil*, tincture of rhubarb, and polychrest salt will be found the best laxatives. From three drachms to an ounce or more of the latter remedy, dissolved in a basin of thin gruel, operates mildly and is perhaps the best opening medicine that can be employed. Opiates at bed-time produce sleep and relieve the patient greatly during the night, but they leave an extraordinary degree of lassitude and depression of spirits the following morning, which require to be counteracted by wine, porter, spirits, or other stimulants; and, judging from our own observation, we think that upon the whole they do more harm than good. Mercury is decidedly injurious, and ought never to be given under any circumstances, not even when the disease is complicated with syphilis.

The best wash for the mouth is a weak solution of *chloride of lime*, or *chloride of soda*; either of these may also be used as a local application to scorbutic ulcers. For the latter, Dr. Lind recommends lint soaked in lemon or lime juice, diluted with twice or thrice its quantity of water. It is always advisable in such cases to cover the dressing with oiled silk in order to prevent evaporation. A *solution of alum* in water in the proportion of two drachms to the quart is an excellent application for spreading or sloughing scorbutic sores.

SENNA.

The best of the Senna used in England is grown in Egypt, and is brought from Alexandria; hence it is commonly called Alexandrian Senna. The purgative power of Senna has been long known in this country: Shakspeare says in Macbeth,

“ What rhubarb, *senna*, or what purgative drug
Would scour these English hence?”

Few domestic remedies are more extensively employed than Senna, and it may be taken with perfect safety in almost every disease where laxatives are required. The simple infusion is prepared by pouring six ounces of boiling water over three drachms of the leaves, and letting it stand near the fire for at least half an hour. Half a cupful to a cupful or more of this may be given to children. Dr. Paris states that the nauseous taste of this infusion is covered by mixing it with *Bohea tea*, sugar and milk being added in the same proportions as in common tea. The infusion is more frequently given in combination with salts, &c., in the form of the black draught (see page 32, No. 22).

The *electuary of Senna* or *lenitive electuary* is a mild and very useful laxative; it is generally recommended in cases of piles, to pregnant women, and for habitual costiveness. It is prepared in the following manner. “Take of Senna-leaves, eight ounces; figs, a pound; pulp of tamarind, pulp of cassia, pulp of prune, of each half a pound; coriander seeds, four ounces; liquorice root, three ounces; refined sugar, two pounds and a half. Beat the Senna-leaves with the coriander seeds, and separate ten ounces of the mixed powder by a sieve. Boil the remainder with the figs and liquorice root in four pints of water to one half, then express and strain. Evaporate the strained liquor until only a pint and a half remain, then adding to it the sugar form a syrup. Lastly rub the pulps with the syrup, and sprinkling in the powder passed through the sieve, mix the whole together.”

Genuine lenitive electuary is not often sold in the shops; Mr. Phillips states that it is generally very badly prepared, containing neither Senna nor cassia. It may be had genuine at Apothecaries' Hall, but is very expensive. The dose is two or three teaspoonsfuls or more.

The compound tincture of Senna is a much esteemed popular remedy, and is well known by the name of *Daffy's Elixir*; it is prepared thus—"Take of Senna-leaves, three ounces; caraway seeds, bruised, three drachms; cardamom seeds, bruised, a drachm; raisins stoned four ounces; proof spirit, two pints. Macerate for fourteen days in a gentle heat and strain. This is a useful warm purgative for those whose bowels have been weakened from intemperance. Dose from two to four tablespoonfuls."

SHINGLES.

This singular disease is characterised by an eruption of vesicles, extending in a semicircular form round one half of the body. In general the eruption is preceded for two or three days by a feeling of languor, slight headache, occasional rigors or shivering, loss of appetite, and increased quickness of the pulse, with heat, aching, a disagreeable feeling of tingling, and sometimes a stinging or burning pain in the part where the vesicles are about to make their appearance. The eruption usually commences at, or near, the navel, sometimes at the lower part of the chest; and extends gradually round to the spine, or it breaks out first close to the spine, and follows an opposite course, so as to appear in either case, like half a sash about three or four inches in breadth. It very rarely surrounds the body entirely, but sometimes passes upwards across the shoulder like a sword-belt. Pliny states that the disease proves fatal when the eruption extends until it encircles the trunk of the body entirely. This assertion is no doubt incorrect, but the same idea still prevails as a popular error in many European countries. The vesicles are filled with a limpid fluid, have a silvery transparent appearance, and are generally distinct, although they are often closely agglomerated, and seem to run into each other. They appear in clusters surrounded by a red inflamed border. Although very minute at first, they enlarge in the course of twenty-four or thirty hours to the size of small pearls, and in the course of three or four days attain their full size, which is about that of a pea. The clusters or patches of vesicles do not

all appear at once, but in succession, so that at one part they have arrived at maturity while at another they are only commencing. On the third or fourth day the vesicles begin to lose their transparent appearance, while the red margin surrounding them changes to a purplish or livid hue; they assume a yellowish colour, flatten and dry up by degrees, or break, and the matter discharged forms dark coloured scabs, which fall off about the tenth or twelfth day.

This disorder is sometimes very slight, unattended with feverish symptoms, and terminates completely at the expiration of a fortnight; but in most cases it lasts from twenty-five to thirty days or even longer; and sometimes leaves a severe pain in some part of the skin which has been covered by the vesicles.

Shingles is not a dangerous disease, although always very troublesome, and often painful; the causes which give rise to it are unknown; it occurs most frequently in autumn and summer; and attacks adults in preference to children or elderly persons. It is not contagious, but may attack the same individual repeatedly.

TREATMENT. Active treatment is not required in this disease; mild laxatives should be taken occasionally; and as long as feverish symptoms are present the diet should be mild, consisting principally of farinaceous articles, as sago, arrow-root, rice or bread pudding, &c. All kinds of strong drink ought to be abstained from, but lemonade or any other cooling beverage may be taken freely. To relieve the smarting and tingling sensation which is often very distressing, the patient may wash the parts affected from time to time with equal quantities of *laudanum* and tepid water. Ointments and other greasy substances ought not to be employed, as they tend to irritate the parts. The *oxide of zinc* (commonly called *tutty-powder*) should be sprinkled over the vesicles when they begin to break, with the intention of absorbing the fluid; this has an excellent effect in relieving the irritation, and is preferable to the application of lotions, poulticing, or any other method of treatment with which we are acquainted. The French physicians employ flour instead of tutty.

To relieve the burning and stinging, which is sometimes experienced after the scabs have fallen off, Dr. J. Frank, of Vienna, recommends a blister to be applied over the part affected.

When the pain is intermittent, and resembles *tic dououreux*, the prepared rust of iron and quinine are the remedies of most avail.

SMALL POX.

From the silence of the writers of antiquity respecting Small Pox, scarlatina, and measles, we have reason to infer that these diseases were unknown to them. Small Pox differs so widely in many respects from all other disorders to which the human frame is subject, and proves so fatal in all countries and climates, that had its ravages been felt in the days of Hippocrates or Galen, it would be unreasonable to suppose that those authors, who minutely described so many diseases of less importance, would have refrained from noticing the most destructive pestilence which has ever been let loose on mankind. The earliest description of Small Pox that has been handed down to us is by Rhazes, an Arabian physician, who practised at Bagdad during the tenth century, and it appears that the disease spread from Arabia to the neighbouring countries. The researches of medical historians lead us to believe that it was extensively disseminated throughout many nations of the East and West, by the conquering armies of Mahomet, at the æra of the Hegira, A. D. 622. Thus, in all ages and countries, the ravages of pestilential diseases have but too frequently accompanied or followed the devastations of war and famine.

The period at which Small Pox reached our Islands is not accurately known ; but from the researches of Moore and other authors of repute, we may reasonably presume that it first appeared in England during the tenth century. Having extended and inspired the greatest terror through the different countries of Europe, the disease was carried in the year 1517 from Spain, by the successors of Columbus, to Mexico, where in the course of a few years it destroyed nearly three millions and a half of the inhabitants, including the brother and successor of the unfortunate emperor Montezuma. At present there is perhaps no country in any quarter of the globe to which the infection has not extended ; but to notice the literary history of Small Pox in detail would require more space than would be compatible with the limits of this volume, and, although it might tend

to amuse the reader, could afford him little or no useful knowledge. We shall therefore proceed at once to give a brief description of the symptoms and treatment of the disease.

The two principal divisions of Small Pox are the *distinct* and *confluent*. In the former the pocks are distinct and separate from each other; in the latter they unite, and the eruption is continuous.

MILD OR DISTINCT SMALL POX. The specific contagious principle, or poison, of Small Pox remains in a latent state in the system during a longer or shorter period, generally ten or twelve days, and then gives rise to fever. The patient is seized with shivering, which is soon followed by thirst, restlessness, and anxiety; he complains of pain in his head, back, and joints; nausea is always experienced, vomiting generally occurs, and pain is felt at the pit of the stomach. Children usually appear sleepy and oppressed, and are sometimes attacked with convulsive fits.

At the expiration of forty-eight hours, or on the third day from the commencement of the shivering, the eruption makes its appearance in small red spots like flea-bites; these are first observed on the forehead, face, and neck, next on the wrists, and gradually increasing in number and size extend, in the course of a day or two, over the whole surface of the body; the legs and feet being always the parts last affected. The feverish symptoms abate on the appearance of the eruption; the pulse diminishes in strength and quickness, the pain of the back, headache, and sickness at stomach are greatly relieved, and the patient is not so restless, and the sleep is more refreshing. The numerous red points constituting the eruption are from the first slightly elevated above the skin; on the second day their base becomes enlarged, and feels hard to the touch; on the third day, beyond which the eruption seldom continues to be thrown out, a small vesicle or pock having a central depression, and containing a thin limpid fluid, shows itself on the summit of each pimple. The pocks are now about the size of a small pea, and with an inflamed border of a damask red colour, more or less vivid according to circumstances; on the sixth day, reckoning from the beginning of the eruption, the central depression disappears, and the fluid which was at first thin and limpid, is

changed to a yellow colour, and presents all the appearance as well as consistence of the matter of an abscess. On the following day the pustules on the forehead, face, and parts where the eruption first appeared, burst, and on the eighth day, still counting from the date of the eruption, scabbing commences over the whole body; but on the legs and feet the pustules are slow in reaching maturity, and do not, in many cases, begin to decay or discharge their contents until three or four days after scabs have appeared on the face.

The fever, which had in a great measure or altogether subsided on the appearance of the eruption, recommences when the pocks are ripened; the pulse becomes quick, the sleep is much disturbed, the urine is again scanty and high coloured, and sometimes there is delirium at night. This is called the *secondary fever*, in contradistinction to the *primary fever* which preceded the eruption. During three or four days previous to the bursting of the pustules the face and hands are in most cases considerably swollen, and the eyes are closed up. At this period the skin emits a sickly, disagreeable smell, peculiar to the disease; it is tender and more or less painful, accompanied with a distressing sensation of itching throughout the whole period of maturation.

In this form of the disease the secondary fever seldom continues long, the swelling of the face and hands soon subsides, and about the fourteenth or fifteenth day of the eruption the crusts have fallen from the face, neck, and upper parts of the body, leaving the skin of a brown or clarety hue, which sometimes does not disappear for two or three months. In many cases ulceration succeeds the bursting of the pocks, and pits or depressions are the consequences which continue through life.

CONFLUENT SMALL POX. The fever which precedes the eruption in this form of the disease is usually very severe; the symptoms enumerated in describing the distinct variety appear in a much more intense degree; the languor and general oppression, the pain in the back and sickness at stomach, are more severely felt; the pulse is quick, contracted or oppressed; delirium often sets in early, and is sometimes of the low character described under the head of Typhus, or the patient is outrageous and requires to be controlled.

The eruption is thrown out to a much greater extent than in

the distinct kind, and this constitutes the principal feature of confluent Small Pox. The vesicles appear early on the third day, and are filled with a thin brownish fluid ; they never rise to an eminence, but run into each other, forming large patches or blebs, and sometimes the face is completely covered, as if with a mask. The face and head begin to swell on the third or fourth day, the glands of the mouth become affected about the same time, and copious salivation continues until the ninth or tenth day ; this symptom is also not uncommon in distinct Small Pox. On the fifth day the eyes are closed up, and the limbs are much swollen. As the disease advances the glands of the neck become enlarged, while the head and face are hideously swelled and disfigured, and contrast in a striking manner with the healthy and blooming appearance which the countenance presented only a few days before. When the pustules break, large dark coloured scabs are formed, accompanied with an exceedingly loathsome smell.

There is little or no diminution of the fever on the breaking out of the eruption ; the patient continues very restless, the sleep is much disturbed, the skin is hot, and the thirst urgent. With the approach of the disease towards its crisis, the symptoms in many cases become still more alarming, the brain and nervous system are affected as in typhus fever, and a long train of typhoid symptoms are manifested ; there is a great prostration of strength, the tongue is dry, tremulous, and protrudes with difficulty, low muttering delirium or a state of stupor comes on, the urine and stools are voided involuntarily, convulsive starting of the tendons, picking at the bedclothes, and hiccup take place, and the patient dies between the eighth and ninth days of the eruption.

The eruption extends to the lining membrane of the nose, mouth, and windpipe, giving rise to great heat of the mouth, sore throat, hoarseness, cough, difficulty of breathing, and a copious tenacious expectoration. Vesicles may be seen in great abundance on the tongue and palate. In many instances the opening of the windpipe is much contracted by the swelling which the inflammation has induced ; while at the same time the air passages are blocked up with mucus secreted by the lining membrane ; the breathing is consequently greatly impeded, and the air is no longer admitted in sufficient quantity to

produce the necessary change in the blood (oxygenation). The symptoms which result from this condition of the air passages are of the most dangerous nature, and generally prove fatal ; the difficulty of breathing gradually increases, the limbs become cold, the red margin surrounding the clusters of pustules, particularly on the lower extremities, changes to a purple colour, the tongue also acquires the same livid hue, and is much swollen ; extreme restlessness and low delirium are the immediate fore-runners of death, which occurs for the most part between the tenth and twelfth days of the disease.

In all cases of confluent Small Pox, the inflammation of the skin is prevented from following its due course, and extends inwards to the adjacent cellular texture. Hence, many patients, unable to bear up against the constitutional disturbance produced by the combined influence of the cutaneous and cellular inflammation, are carried off at an earlier or later period, generally about the ninth day of the eruption.

Some patients, however, are fortunate enough to escape all these impending dangers, and the disease reaches the period of decline ; but another ordeal, fraught with extreme danger, has still to be gone through. The restorative process has no sooner commenced than a state of general excitement, called *secondary fever*, is lighted up ; this occurs in all cases where the inflammation has penetrated to the cellular texture beneath the skin, and is also frequently experienced in children and delicate persons even in the distinct variety of the disease, where the cellular substance is little or not at all implicated. On the ninth or tenth day of the disease, sometimes later, the skin becomes hot and dry, the pustules are hard and scaly, the pulse is increased in frequency, the tongue is white, there is great thirst, and the patient is deprived of sleep. This secondary constitutional disturbance may be complicated with various local disorders ; these are sometimes confined to the external parts of the body, in other cases again the internal organs are affected. Sometimes the skin on every part of the body not covered by the pustules, and the throat, assume a red appearance as in scarlatina ; or erysipelas is manifested, giving rise to numerous vesications or blisters. Boils and abscesses may form in various parts, or mortification and sloughing may take place, and destroy the

skin of the extremities, or of the back, hips, and other parts on which the body rests. Many patients gradually sink under these affections, and die completely exhausted. The eyes are occasionally attacked with violent inflammation, their internal structures are destroyed, and the sight is lost, or the *cornea* in front of the eye (see page 201), is ulcerated, and leaves pearly looking specks ; but in general the mischief is confined to one of the eyes. The internal parts most frequently attacked during the course of the secondary fever are the pleura or lining membrane of the chest, and the brain. Children grind their teeth and squint, all the symptoms of hydrocephalus or water in the head are developed, and death is then inevitable. Grown-up persons are sometimes carried off by acute inflammation of the brain (see page 73), and, says Dr. George Gregory,—“ There is another condition of the brain and nervous system not unfrequently observed in the progress of secondary fever. It is identical with that which accompanies the destruction of large portions of the skin by fire, and which is familiar to surgeons as the consequence of extensive burns and scalds. The symptoms are severe, and repeated rigors, followed by general tremors, low delirium, a quick, thready, and tremulous pulse, a dry brown tongue, collapse of the features, cold extremities, starting of the tendons, and death.”

MALIGNANT SMALL POX. In this form of the disease the fluids of the body are in a depraved state, and hæmorrhage or discharge of blood takes place from the nose, the gums, the stomach, or bowels, and in females from the womb. Purple coloured fever spots (*petechiæ*) make their appearance on all-parts of the skin not covered by the eruption. The pocks as they advance to maturity, instead of being filled with yellow coloured matter (*pus*), contain a thin bloody coloured serum, and run into each other as in the confluent form above described. There is great prostration of the vital powers, the countenance is haggard, the breathing is hurried and irregular, the urine is dark coloured or bloody, and the patient is affected with low muttering delirium almost from the onset of the disease, although in some instances the intellectual faculties continue unimpaired to the last. This is by far the worst form of Small Pox, and almost invariably destroys life between the fifth and eighth days from the commencement of the eruption.

To notice all the forms of Small Pox described by authors would require many pages, and instead of being of service would more likely bewilder the reader. The same contagious poison may in one individual produce a mild form of the disease, in another the most malignant, and the disorder under whatever form it appears is ever liable to be modified by circumstances, hence the mildest distinct variety may pass by insensible gradations into the confluent; or it may happen that the distinct or confluent form, although free from unfavourable symptoms at the commencement, may, during the progress of the disease, from improper treatment or other causes, become malignant, or be complicated with inflammation of some internal organ, and cause death. It must therefore be obvious, that in nature no precise line of demarcation can be drawn between the ordinary forms of Small Pox, scarlatina, or typhus fever, and that whatever classification of those diseases is adopted must necessarily be essentially arbitrary.

Mild or distinct Small Pox seldom proves fatal; but when the disease appears under the confluent form it is much more to be dreaded, and the malignant variety almost invariably proves fatal. The signs which lead us to anticipate a favourable termination are a small and soft pulse, undisturbed sleep, quiet of mind, and a crimson coloured border surrounding the pocks. The unfavourable symptoms are restlessness, sleepless nights, delirium, hoarseness, cough, &c., occurring at an early period of the disease; the appearance of vesicles on the tongue, or the inside of the mouth and throat, a purple or clarety coloured margin surrounding the pocks, a white and pasty appearance of the face, and flatness of the pocks on the body and extremities. Purple coloured fever spots (*petechiæ*), and loss of blood from the mucous membrane of any part of the body announce a fatal termination. Infants and people advanced in life seldom recover from confluent Small Pox—the most favourable age for receiving the disease is from the seventh to the fourteenth or fifteenth year.

The proportions of deaths is said to be about one in every four persons who receive Small Pox in the natural way; it is also computed that three patients out of every five perish from the confluent species; and the report of the Registrar-General shows

that the deaths throughout England and Wales from this disease amount annually to about 12,000.

CAUSES. Few persons, now, believe that Small Pox can be propagated independent of external agency ; the general opinion is, that in every instance it arises from a specific poison or contagious principle derived from some one already affected, with the disease. It is well known that the infectious effluvia are contained in the air which surrounds the patient, and also that the seeds of the disease adhere to linen, clothes, bedding, and other things, and may lurk in them a long time in full force, until they are extricated by some cause, and occasion the complaint.

The contagious influence of Small Pox is sometimes widely diffused, and the disease spreads over a great extent of country, carrying on its ravages for many months. But these epidemic visitations cannot be satisfactorily accounted for ; they do not appear to depend upon any unusual condition of the atmosphere : in the severe epidemics of 1781, 1796, 1825, and 1838, the disease spread with the greatest facility in spite of every vicissitude of weather, or extreme of heat or cold. We are still ignorant of anything that can be assigned as the original cause of Small Pox. Dr. Baron, in his Life of Jenner, speaks of a tradition which has been handed down by the Arabian physicians that it was originally derived from the camel, but no reasons of any value have ever been brought forward in support of this opinion.

Individuals of all ages are alike susceptible of the contagion of Small Pox ; it may even be communicated by the mother to the child in the womb. This disease attacks a person only once during life, but some exceptions to this law have been recorded ; one of them is the case of Louis the Fifteenth of France, who after experiencing the complaint at the age of fourteen was afterwards attacked by it when sixty-four years of age. Dr. Heberden estimated the proportion of cases in which the disease occurred a second time as only 1 in 10,000.

Although in Georgia, Circassia, Egypt, and India, *inoculation* had been practised from time immemorial, in order to mitigate the violence of Small Pox, yet in Europe the practice was unknown for centuries, and the disease swept off tens of thousands during every generation, and left thousands more disfigured, crippled, or blind, burthensome to themselves and distressing to

the feelings of others. At last, Lady Mary Wortley Montague, whilst with her husband during his embassy to Constantinople, witnessed inoculation, and being convinced of its efficacy, submitted her children to the operation, which fully answered her expectation. In one of her letters, dated April 1, 1717, she says, "The Small Pox, so general and so fatal amongst us, is here entirely harmless by the invention of *engrafting*, which is the term they give it. There is a set of old women who make it their business to perform the operation. Every year thousands undergo it, and the French ambassador observes pleasantly that they take the Small Pox here by way of diversion, as they take the waters in other countries. There is no example of any one that has died in it, and you may believe I am well satisfied of the safety of the experiment, since I intend to try it on my dear little son. I am patriot enough to take pains to bring this careful invention into fashion in England." This highly accomplished and spirited lady fulfilled her promise, and introduced the practice into this country in 1721; thence it spread rapidly over all Europe, and deprived this loathsome disease in a great measure of its virulence and fatality. Inoculation, however, was attended with many serious disadvantages, and is now therefore entirely superseded by vaccination, which is in every respect decidedly preferable.

TREATMENT. Small Pox, like scarlatina and other diseases which result from a specific contagion, must run a certain course, and pass through its natural stages before the patient can be restored to health; hence, we must not attempt to stifle the development of the symptoms or unnecessarily interfere with the natural progress of the disease, but should confine our treatment to palliative measures, and to preventing or counteracting any untoward accident which may occur during its course. The inflammatory disorders which sometimes arise during the progress of the disease, should on the contrary be treated by remedies of a more active nature.

In the mild or distinct species of Small Pox, the inflammation of the skin is always comparatively slight, and that of the mucous membrane of the air passages is seldom very severe; it should nevertheless be borne in mind, that the eruption is not always developed in these structures in an equally mild form. In some

instances, although mild and perfectly distinct externally, it may be accompanied with internal affections of a sufficiently serious nature to require the greatest attention and the most careful management. When, however, the eruptive fever is mild, and the inflammation of the skin moderate, we have merely to keep the patient in bed, in a cool, well-aired chamber, and watch the progress of the disease. Should the symptoms which precede the eruption be attended with frequent vomiting, pain, and tenderness of the abdomen, we should apply four to twelve leeches to the abdomen (according to the patient's age), and administer cooling drinks freely; general blood-letting will not be necessary, unless there be evident signs of inflammation of the stomach. Accidents of this kind, however, and other dangerous symptoms, seldom attend the benign form; they are more frequently observed in the severe or *confluent* species, to the treatment of which we shall now direct our attention. As we have already mentioned, the eruptive fever of confluent Small Pox is often very violent, and attended with delirium, or convulsions in children. The violence of the premonitory fever may be alleviated by general blood-letting, and, although there is some difference of opinion upon the point, it will be the safer practice to abstract blood from the arm (in proportion to the patient's age), lest the fever should turn out to be an inflammatory one, and not a precursor of Small Pox. When the headache is very severe, a dozen leeches may be applied to the temples, and a saline dia-phoretic draught with twenty drops of opium given at night. The occurrence of convulsions in children need not excite much alarm, unless they be extremely violent and accompanied by signs of excessive determination of blood to the head; the treatment of these accidents has been already pointed out (see Convulsions).

During the period of maturation, that is to say, while the pustules are rising and filling with matter, the antiphlogistic regimen must be strictly pursued; the patient should drink nothing but cold barley water, lemonade, toast water, &c.; a laxative draught, composed of *senna* and *salts* (see No. 22, page 32), or half an ounce of *castor oil* with thirty drops of *tincture of hyoscyamus* should be given at bed-time, and the occurrence of local symptoms should be carefully watched and met with appropriate

remedies. For example, when the skin is considerably swollen, tense, and painful from the quantity of pustules, sponging the skin with tepid water will frequently afford considerable relief. Swelling of the glands of the neck and inflammatory sore throat will require the employment of leeches, gargles, and in some severe cases of general bleeding (see Quinsy). Although the patient may be highly excited and delirious at night, the disturbance of the nervous system more frequently depends upon irritation than actual inflammation of the brain; hence it will seldom be necessary to bleed the patient on account of these symptoms, unless there be evident signs of inflammation within the head (see Brain, inflammation of), and the patient be very strong and of robust constitution. Inflammation of the air passages or substance of the lungs, indicated by frequent cough, spitting up thick mucus mixed with matter, with great oppression and difficulty of breathing, is of much more frequent occurrence than in inflammatory affections of the head; under these circumstances the treatment mentioned under the heads of *Bronchitis* and *Pneumonia* should immediately be employed, with the understanding that patients labouring under Small Pox or other eruptive disorders will not bear so liberal an abstraction of blood as other persons. During the period now under consideration, and indeed at a later one, during the decline of the pustules, the eyes are frequently attacked by a severe form of inflammation, which often terminates in loss of sight. Numerous examples of this accident were, at one time, seen in the persons of those unfortunate mendicants who perambulated the streets, totally blind and deeply marked by the ravages of Small Pox. When the eyelids are considerably swollen, the eyes painful, and matter begins to run underneath the lids, or by drying glues them together, we must at once apply a dozen leeches to the temples, foment the eyes constantly with a warm decoction of poppies, and frequently inject underneath the lids one of the lotions recommended at page 289. During the whole course of this period the bowels should be opened once or twice every day by a laxative medicine; for this purpose the prescriptions mentioned at page 32 will answer sufficiently well.

One of the most interesting points in the history of the treatment of Small Pox is the various efforts which have been made,

from time to time, to prevent the pustules from coming to maturity, and thus diminish the irritation and other unpleasant consequences that invariably accompany an extensive crop of confluent pustules over a large surface of the skin ; for obvious reasons the greatest attention has been paid to the state of the face and neck. The Arabian physicians were in the habit of opening the pustules, when completely formed, and pressing out the matter in order to prevent its absorption ; the parts are then washed gently with a rag moistened in tepid milk ; this practice may always be followed with advantage. Some French physicians endeavoured to prevent the formation of pustules altogether, by *cauterising* them on the first or second day with the *nitrate of silver*. This may be done most safely by touching the pustule with a sharp-pointed stick of lunar caustic ; the caustic should be applied lightly twice a day, so as not to burn the surface of the skin deeply ; in this way the pustules are frequently prevented from coming to maturity.

A third method has still more recently been introduced, and employed with the best effects ; this consists in covering the face, or such parts of the body as we wish to preserve from scars, with a mask of mild mercurial plaster : the plaster must be applied as soon as the pustules make their appearance, and be kept on for four or five days without intermission. Numerous facts recorded by M. Serres, and other French physicians, testify to the efficacy of this method ; it is not attended with any danger, and may be safely entrusted to the hands of persons who have not received a medical education.

Malignant Small Pox, as we have already had occasion to mention, almost always proves fatal ; still should a case of this kind occur, we must not abandon the unfortunate sufferer to his fate. The practice usually adopted is to administer cordials and stimulants. Small quantities of brandy or wine may be given during the day, if the patient appear to be very low or exhausted ; and camphor with ammonia, in the following form—

No. 287.

Camphor mixture, twelve ounces,

Carbonate of ammonia, half a drachm. Two ounces to be taken every three hours. Twenty drops of æther or of the fetid spirit of ammonia may occasionally be added.

When the malignant form is attended with frequent discharges of blood from the bowels, or other outlets of the body, we must have recourse to some of the mineral acids with bark—

No. 288.

Decoction of bark, six ounces,
Diluted sulphuric acid, three drachms.
An ounce to be taken every three hours.

Persons labouring under confluent Small Pox, especially towards the end of the disorder, require constant care and attention. When the whole body is covered with pustules which emit fetid pus, in greater or less quantity, the surface should frequently be sprinkled with starch powder; the linen must be frequently changed, and every attention paid to cleanliness. Sores of an evil nature are, about this time, apt to form on the buttocks, or other parts of the body exposed to pressure; these sores must be carefully looked for, and undue pressure prevented by placing pillows under the back, legs, &c.; the sores may be dressed with a decoction of bark, and the patient's strength supported by wine, nourishing broths, and cordial draughts. The following is a good form—

No. 289.

Compound infusion of orange peel, twelve ounces,
Aromatic confection, six scruples,
Sulphate of quinine, one scruple. Two ounces to be taken every four hours.

SODA.

The medical virtues of the Carbonate of Soda are similar to those of the carbonate of potash (see page 508). This salt is at present extensively employed, in Great Britain, in various complaints, but more particularly in indigestion; when given in this disorder it is usually combined with the decoction of calumbo, or of gentian, or the infusion of chamomile flowers. Many medical men consider it to be a remedy of great value in the treatment of typhus fever; and Dr. Stevens, formerly of the island of St. Croix, recommended the administration of this, and some other neutral salts, more particularly nitre and common

salt, as the most efficacious means of treating the remittent and malignant fevers of the West Indies ; but the high expectations of success which were at one time formed from this method of treating the fevers of warm climates have not, we regret to say, been realised, although these saline remedies, according to the formula directed by Dr. Stevens, have been repeatedly tried by many experienced practitioners throughout the West India islands.

The celebrated French physiologist, Magendie, has stated his belief that the long continued use of Carbonate of Soda tends to liquify the blood, and proves decidedly injurious by inducing inflammation and other diseased states of the lungs ; but British practitioners, who are in the constant habit of prescribing this remedy, are well aware that this opinion, like many other of Magendie's theoretical views, is not supported by facts. Although this salt may not have produced all the beneficial effects which have been attributed to its use, in the first stage of consumption, scrofula, chlorosis, and other disorders in which it has been employed, it has at least the advantage of being perfectly harmless, and this is more than can be said for many of the popular remedies in daily use. It must, however, be kept in recollection that this salt, like the carbonate of potash and all other alkaline remedies, is contraindicated in certain cases, as for example, when there is a deposition of white sand in the urine.

The Carbonate of Soda is sometimes used in preference to the carbonate of potash, in the preparation of effervescing draughts.

The dose is from fifteen grains to a drachm, in water twice a day.

The *Borate of Soda* or *Borax* is seldom used internally. A drachm of this salt powdered, and mixed with an ounce of clarified honey, forms a useful local application to the sore mouths of children. The following mixture is very serviceable as a cooling gargle in common sore throat, and as a wash for the mouth where profuse salivation has been produced by the inordinate use of mercury—

No. 290.

Borax, in powder, two drachms,

Rose water, eight ounces,

Tincture of myrrh, two drachms,

Honey, a teaspoonful. Mix.

SPRAINS.

When a joint is twisted or strained in a direction contrary to its natural range of motion, or is moved to too great an extent in a natural direction, the injury done to the part is called a Sprain. In all cases the ligaments and tendons are stretched, and the soft parts about the joint are more or less injured. The pain which immediately follows the accident is always very acute, and greatly increased by the slightest motion of the joint ; sometimes it is accompanied by sickness at stomach and faintness. The parts soon become swollen, and in many cases there is considerable discolouration occasioned by the bursting of numerous small vessels, and the consequent effusion of blood into the cellular or fatty substance beneath the skin. In severe cases the ligaments are partially torn, and the muscles of the limb are injured. Sprains are always very troublesome injuries, and often, especially in elderly persons, require a longer time before the cure is completed than a broken bone or a dislocation. In persons of scrofulous constitutions a Sprain frequently becomes a very serious and tedious disorder, and, when neglected or improperly treated, sometimes gives rise to the disease of the joints called white swelling. The parts most liable to this accident are the ankles, wrists, and joints of the thumbs and fingers ; the ankle is most frequently affected, particularly at the outside of the joint; a fall, making a false step, as it is usually called, and leaping, are the ordinary causes. A Sprain at the wrist or at the thumb or fingers commonly arises from falling upon the hand.

TREATMENT. The first indication to be attended to in the treatment of Sprains, is to prevent or subdue inflammation ; and for this purpose the most essential of the measures to be adopted consists in keeping the joint perfectly at rest, the limb being elevated higher than the rest of the body in order to diminish the flow of blood to the part. When the ankle is sprained, the limb should be placed upon a pillow covered with a piece of glazed cloth, and the parts are then to be kept constantly wet with any simple cold lotion, as *Goulard water*, or vinegar and water. But cold applications are not to be employed if the patient be troubled with cough or disposed to inflammatory disorders of the lungs, and females are no doubt aware that they would

be improper during menstruation. Many surgeons, instead of applying cold lotions to sprained or bruised parts, prefer the practice of fomenting them with warm water, or *decoction of poppy heads*. On this point the patient must judge for himself; if cold applications do not produce the effect of soothing the pain and abating the inflammation, it will then be proper to have recourse to warm emollient fomentations.

In severe cases it may be necessary to apply twelve or fifteen leeches round the joint, and afterwards warm emollient fomentations and poultices; cooling saline purgatives are to be taken, and the patient ought to confine himself to low diet until the inflammatory action is entirely subdued.

The second indication is to restore the proper tone of the vessels, and to brace the weakened parts, in order to allow the joint to perform its natural functions. But no measures are to be had recourse to, with the intention of fulfilling this indication, until we have succeeded, by keeping the joint perfectly quiet, and by the means above directed, in subduing the inflammation. It will then be necessary to pump cold water on the joint, and employ friction with *opodeldoc* or some other stimulating application. In fact, the treatment is to be conducted on the same principle as that of bruises (see page 98). There is no better method of keeping down the swelling, of supporting the parts, and restoring their tone, than pressure by means of a laced stocking, or the application of a flannel-roller. Some practitioners apply strips of adhesive plaster in opposite directions round the joint, and this when properly managed is perhaps the best plan of employing pressure.

In concluding this short article we must remind the reader, that the most essential part of the treatment consists in keeping the joint at rest, and without attention to this, no remedies are likely to be of much service. Recovery is often retarded by premature attempts at using the limb; by this imprudence the inflammation in many instances is renewed, and becomes chronic, the bones at the joint become diseased, and amputation is the consequence.

SPANISH, OR BLISTERING FLIES.

Spanish Flies, or Cantharides, are a species of beetles imported into this country chiefly from Sicily, but are common in Spain, Italy, and other parts of Europe. They are found adhering to the leaves of the ash, the lilac, willow, and other plants, and are collected before sunrise in the months of June and July; they are killed by being exposed to the vapours of vinegar, and are afterwards dried in a stove.

Cantharides are of a shining gold and greenish colour, have a faint sickly smell, and an acrid taste, with a flavour resembling that of pitch. These insects are employed for medical purposes both internally and externally, but are chiefly used to make the common *blistering plaster*. When the immediate effect of a blister is required the *vinegar of Cantharides* is the most effectual application. A piece of blotting paper moistened with this fluid raises a blister almost immediately; hence it may prove of essential service when applied behind the ears in toothache, or over the stomach in cases of sudden cramp; and the raw surface produced in this manner affords a ready means of introducing certain medicinal substances into the system by absorption; morphine, for example, when sprinkled upon a portion of the skin which has been deprived of its cuticle, is quickly absorbed, and the patient may be thus relieved where remedies could not be otherwise employed, as in cholera, colic, &c.

Cantharides are sometimes employed internally in cases of palsy of the bladder, whites, gleets, &c., and are administered either in *tincture* or in *powder*, the dose of the former being from ten to thirty drops, that of the latter from one to three grains. In full doses they act powerfully on the urinary and generative organs, and if taken incautiously may produce stranguary, bloody urine, vomiting, and inflammation of the bladder, kidneys, or intestines.

Cantharides are sometimes absorbed into the system from a blister, and cause great heat, pain, and difficulty in making water. When this accident occurs the patient should drink freely of barley water, linseed tea, or any other demulcent drink, and take four ounces of *camphorated emulsion* with twenty drops of *laudanum* or half a drachm of the *tincture of henbane*, to each dose.

SPITTING OF BLOOD, OR HÆMORRHAGE FROM THE LUNGS.

This is always to be regarded as a very serious disorder, not that we have much reason to apprehend danger from the mere loss of blood, but because we know that Hæmorrhage from the lungs seldom takes place independently of some internal disease of a dangerous character. In the great majority of instances Spitting of Blood is a symptom of consumption, and then all that can be done is to moderate the discharge during the attack ; we have no means of removing the cause on which the Hæmorrhage depends, and therefore cannot prevent its return. Sometimes it arises from organic disease of the heart, and in this case, also, little can be done for the relief of the patient, because the primary disease is beyond the control of medicine. A more favourable opinion may be formed when we have reason to suppose that the Hæmorrhage arises from obstruction of the menses ; or suppression of the discharge from piles ; from excessive fulness of blood in the system ; or from congestion or accumulation of blood in the lungs. A similar opinion may be formed when it results from falls or blows on the chest, great exertion of the voice, the inhaling irritating fumes, or from obstruction in the liver or spleen : but under all circumstances it is to be considered as a very suspicious symptom. When this form of hæmorrhage is caused by a wound in the chest, it is usually a fatal symptom. The deep poignard wound of the chest which Henry the Fourth of France received from the assassin Ravillac, caused profuse vomiting of blood, and death was almost the immediate consequence.

This disorder may come on suddenly when the patient least expects it ; but in general it is preceded by symptoms of congestion of the lungs. A sensation of tightness, heat, and itching is felt throughout the chest, or at some particular part of it, accompanied with difficulty of breathing and a feeling of anxiety. The pulse may be felt jerking or vibrating under the finger, the patient experiences frequent chills alternating with flushes of heat, his extremities are cold, and he feels languid. When the blood has escaped from the vessels, and is thrown loose into the air passages, a sense of ebullition or bubbling is felt in the chest, arising from the air coming in contact with the blood during the

alternate movements of inspiration and expiration; at the same time there is often a saltish taste in the mouth, and the difficulty of breathing is increased. At length the irritation in the air passages produces cough, which is followed by expectoration of a greater or less quantity of blood. Sometimes the titillation excited in the windpipe and throat causes the contents of the stomach to be thrown up, and, as these are mingled with blood, we might at first suppose that the Hæmorrhage has proceeded from the stomach. But in most cases the red vermillion colour and frothy appearance of the blood, and the previous symptoms of internal disease, are sufficient indications that the lungs are the source of the Hæmorrhage. The extent of the discharge varies greatly; many cases are on record where persons have ejected considerable quantities of blood from the lungs, periodically, for years, and yet have ultimately recovered; but in persons of a scrofulous or tuberculous constitution the slightest expectoration of blood is a symptom of fearful omen (see Pulmonary Consumption, page 520).

Women are more subject to Spitting of Blood than men, owing in a great measure to the facility with which the menstrual flux is obstructed from various causes. When that important function is suppressed, or ceases to be performed, the superabundant blood sometimes seeks its way out of the body through other channels; occasionally it escapes from the blood-vessels of the lungs into the air passages, and is coughed up without causing pain or much inconvenience. This may continue periodically for a considerable length of time, perhaps for years, and at last ceases when the natural function of the womb is restored. Many women otherwise in good health are affected with periodical Spitting of Blood every time they become pregnant; but in all cases of this description the discharge, even when profuse, is not to be viewed in so serious a light as when it occurs under other circumstances. Another fruitful source of this disorder in girls is the bad habit of wearing tight stays. When the chest is strongly girt with stays, the natural movements of respiration are impeded, and the blood is retarded in its passage through the lungs; the obstruction thus produced acts in the same manner as malformation of the chest, organic diseases of the heart, or any other circumstances, which, by mechanically interrupting the balance of the circulation, may

cause the blood to stagnate in the lungs until, as not unfrequently happens, it is forced out of the vessels into the bronchial tubes or air passages, and discharged by the mouth. Spitting of Blood is not the only evil which this artificial system of restraint induces; the free expansion of the lungs being impeded, the breathing is rendered shorter and quicker than natural, and the air not being admitted in due quantity, the blood is not sufficiently oxygenized, and the whole organization of the body suffers in consequence. The healthy temperature cannot be kept up, the countenance is pale, the feet are often cold, and there is a degree of listlessness and depression which unsuits the body for the requisite exercise of its physical powers. This imperfectly vitalised state of the blood prevents the process of nutrition from being adequately accomplished; hence every part of the animal economy is reduced below the standard of healthful vigour, and if any dormant predisposition to consumption be present, nothing will more certainly rouse it into action than this depressed condition of the vital powers, a condition which but too frequently brings on this fatal malady, where no hereditary disposition exists; and in all cases increases the susceptibility to the impression of other diseases.

The EXCITING CAUSES of this disorder are numerous. It may arise from any violent bodily exertion, as running, rowing, or wrestling, from sudden changes of temper, or from sudden exposure to cold when the body is overheated, and it may be brought on by any circumstances which debilitate the body or render the circulation irregular. Fatal Hæmorrhage from the Lungs has occurred in some instances from distress of mind. Sismondi mentions that the Doge François Foscari, on his deposition in 1457, hearing the bells of St. Marc announce the election of his successor, Malipiere, died suddenly from Hæmorrhage caused by the bursting of a blood-vessel in his lungs.

TREATMENT. A safe and excellent popular remedy, frequently employed to check Spitting of Blood, is *common salt*. The patient should swallow from a dessert to a table spoonful, dissolved in cold water, as soon as possible after the Hemorrhage begins from the lungs. It is usual to repeat the dose daily, for three or four days, in order to prevent a return of the disease. It always produces a burning sensation as it passes into the stomach, and is followed by considerable thirst; sometimes it excites

sickness at stomach. Common salt was employed to stop Hæmorrhage from the Lungs by Dr. Rush, of Philadelphia, Dr. Percival, of Manchester, and other distinguished physicians. It has the advantage of being always at hand, and may be given even to the extent of two tablespoonfuls at a time with perfect safety. But we are not to rely on this remedy alone; if the patient be young, and not enfeebled by previous illness, he should be bled from the arm until he become giddy and feel as if he were about to faint; and while the blood is flowing from the arm, the chest should be sponged with cold salt and water, or vinegar and water, the clothes being loosened or removed from the upper part of the chest. A *blister* may be applied between the shoulders. The bowels must be freely opened with *Epsom salts*, and from a drachm to a drachm and a half of *nitre* should be given, in cold barley water, in the course of twenty-four hours. The diet should consist of mild farinaceous substances, as arrow root, sago, gruel, panado, &c., milk, or fresh made soft curd. Repose both of body and mind are absolutely necessary; the patient should not be allowed to speak, and everything which might produce excitement of the system is to be carefully avoided.

The patient must be strictly watched, and if the pulse be observed to increase in strength and frequency, and symptoms of congestion or determination of blood to the lungs be again manifested, the general bleeding must be repeated, or from twelve to twenty *leeches* should be applied over the chest. The latter measure ought never to be neglected if the patient complain of pain or a sensation of fulness and weight at a particular part of the chest.

In cases where the constitutional disturbance continues, and the strength of the patient will not admit a repetition of the bleeding, the mixture of *tartar emetic* and *henbane* as directed at page 425, No. 243, given in the dose of a dessert spoonful every hour, or at longer or shorter intervals, so as to keep a slight degree of nausea occasionally, is a remedy in which the greatest confidence may be placed. The tartar emetic never fails to restrain the violence of the heart's action, while the henbane allays the cough, and acts as a sedative. The use of this mixture should not prevent the patient from taking nitre in barley water, as above directed.

When the patient is delicate, and the Hæmorrhage is not attended with increased action in the system, blood-letting would be improper. The feet should be placed in hot water, to which a portion of mustard has been added, and common salt should be administered as above recommended, or *sugar of lead* with laudanum may be employed in the manner directed at page 459, No. 248. It will also be advisable to apply a large blister over the chest. The diet, although mild, should be sufficiently nutritious, and when the attack is over a little port wine, or claret and water, may be allowed.

These are the means to be adopted during the attack, the subsequent treatment must depend on the nature of the disease which has given rise to the Hæmorrhage, for, as has been already mentioned, this affection is much more frequently symptomatic of disease of the lungs, heart, &c., than a disease in itself.

We mentioned at the commencement of this short essay that Spitting of Blood may arise from obstruction of the menses, and that when we succeed in restoring this important function, the Hæmorrhage from the Lungs does not recur. It must, however, be kept in recollection that Spitting of Blood rarely occurs from this cause, although for the most part it attacks young women whose menses have been for some time obstructed, and it has been well ascertained that, under such circumstances, both these affections, in the great majority of cases, result from tubercles in the lungs, as we have had already occasion to notice in another part of this volume (see Pulmonary Consumption). It is therefore preferable to wait until the advice of a physician can be obtained, than to administer stimulating remedies with the intention of bringing back the menstrual discharge. In certain cases severe Hæmorrhage from the Lungs occurs in females at the turn of life, when the menstrual discharge is about to cease altogether. The symptoms of this form are often very alarming, but the loss of blood is usually restrained by an assiduous use of the means just pointed out.

SQUILL.

Squill is the bulbous root of a plant, which is a native of the sandy shores of Spain, Italy, and some other European countries. This medicine acts as an emetic, but is seldom used for that

purpose; it is principally employed as a diuretic and expectorant.

The dried root of Squill is often of great service as a diuretic in dropsy, in the dose of a grain evening and morning, gradually increased to three grains; its power is augmented by combining it with small doses of calomel, or blue pill. This combination is more particularly useful when dropsy is connected with obstruction of the liver, or spleen.

The *tincture* and *oxymel* of Squills are frequently prescribed to promote expectoration in chronic cough, asthma, hooping cough, and difficulty of breathing occasioned by the lungs being oppressed with tenacious phlegm. The stimulating property of Squill renders its use improper in all cases connected with inflammation. The dose of the tincture of Squills is from ten to twenty drops three times a day, and of the oxymel half a drachm may be given three or four times a day.

STOMACH, INFLAMMATION OF.

Acute Inflammation of the Stomach is a rare disease. When severe it is characterised by symptoms which distinguish it from other disorders. After the usual premonitory symptoms of all acute inflammatory affections, such as pain of the limbs and loins, slight giddiness, lassitude, general uneasiness, and a fit of shivering or chills alternating with flushes of heat, the patient is attacked with burning pain at the pit of the stomach, nausea, retching, great anxiety, and extreme restlessness. There is an urgent and constant desire for cold drinks, which, for the most part are no sooner swallowed than they are thrown up again, mixed with portions of mucus or bile. The region of the stomach generally feels unusually hot, and the slightest pressure upon it greatly augments the pain. The pulse is quick and small, sometimes soft, but more frequently hard, the tongue at the commencement of the disease may be white and furred, or it may present no particular appearance, but in general it soon becomes rough in the centre and towards the root, while its edges and point are red. In bad cases the pain extends upwards along the gullet, and across the abdomen, attended with a great sense of tightness, and shooting pains are felt extending to the back be-

tween the shoulders; the breathing is quick, hiccup is a more or less troublesome symptom, and the countenance is expressive of anxiety and extreme suffering. If the disease continue to gain ground, the thirst becomes unquenchable; and, although the patient is well aware that whatever he takes into the stomach will be almost immediately vomited up with great pain, yet so urgent is the thirst, that he is unable to resist the craving for cold drink with which he is unceasingly tormented; the breathing becomes quick and laborious, the patient lies on his back, and perhaps faints when any attempt is made to raise him up in bed; the pulse is now small, feeble, and intermitting, cold sweats break out all over the body, the extremities are cold, the features are shrunk, and for some time before death there is great prostration of strength.

When Inflammation of the Stomach gives rise to the alarming train of symptoms above enumerated, we have always reason to suspect that some acrid or corrosive substance has been swallowed, such as arsenic, cantharides, or corrosive sublimate, because we know that this violent form of the disorder seldom occurs independently of the operation of irritating poisons. If, therefore, the vomiting and other symptoms already noticed, which announce the disease, can be traced to this cause, no time should be lost in removing the poison from the stomach. This is most effectually done with the stomach-pump; by means of this instrument the surgeon fills the stomach with warm water, then pumps it out, introduces more water, removes it in the same way, and continues in this manner to fill and empty the stomach until the fluid comes away quite clear. But if medical aid cannot be obtained, an emetic of from twenty-five to thirty grains of the *sulphate of zinc* (*white vitriol*), or ten grains of the *sulphate of copper* (*blue vitriol*), dissolved in a wineglassful of water, should be administered as soon as possible. These emetics are to be preferred, because they act more promptly than ipecacuan or tartar emetic. After the poison has been removed, whether by means of the stomach-pump or an emetic, the ordinary remedies for Inflammation of the Stomach are to be employed according to the urgency of the symptoms.

The occasional causes of Inflammation of the Stomach are excess in eating and drinking, indulging in the use of highly sea-

sioned food, blows inflicted over the stomach, drinking cold water, using ices when the body is overheated from exercise, exposure to cold and damp, or any of the ordinary occurrences which produce inflammation in other organs or parts. In children it occurs most frequently during the process of dentition, and it often arises during the course of fevers and other inflammatory disorders of warm climates.

The duration of the disease depends on the violence of the cause which has given rise to it, and on the severity of the symptoms; it is always to be considered as a dangerous disorder, and often terminates fatally in the course of two or three days, sometimes at an earlier period; in other cases it continues one, two, or even three weeks, and terminates favourably.

TREATMENT. In all acute inflammatory diseases the first thing to be done is to draw blood freely from the arm, and the sooner this measure is adopted the more benefit the patient is likely to derive from it. The blood should be allowed to flow from the arm, the patient being in the erect position, until a sensation of faintness and a slight degree of giddiness are experienced. The extremities of the body are generally cold, and therefore it will be proper to immerse them in warm water, or employ mustard poultices, in order to restore them to their natural temperature. No kind of aliment is to be allowed, but the patient may drink a little cold water occasionally, or iced water if it can be procured. In severe cases, where no kind of fluid can be taken without causing vomiting and considerable aggravation of the pain, the intolerable thirst may be relieved to a certain extent by rinsing the mouth from time to time with cold water, or by allowing portions of ice to dissolve in it. The bowels are usually constipated, and therefore it becomes necessary to have them evacuated, but we are not to do this by making the patient swallow purgative medicines, because the stomach being in a highly irritable state would immediately reject them, and even if it did retain them, they would certainly tend to increase the inflammation; hence, it will be preferable to administer clysters of warm water, with common salt or castor oil.

If, at the expiration of six or eight hours from the first bleeding, the pain and feverish symptoms be again urgent, it will be proper to apply, over the region of the stomach, from fifteen to

forty *leeches*, according to the intensity of the inflammation, the age, the strength of the patient, and other circumstances; and when they fall off, warm fomentations or poultices are to be employed, in order to promote the bleeding. If these energetic measures fail to arrest the progress of the disease, all that then can be done with propriety is, to assist nature in conducting the disease to a safe termination; the most efficient practice in order to attain this end, is to keep the patient as quiet as possible, and to moderate the inflammation by repeating the application of leeches, to the extent of eight, ten, or more, to the pit of the stomach, as often as the pain and irritability of stomach shall seem to indicate, and the age and strength of the patient, the stage of the disease, and other circumstances, shall appear to authorise. It must be obvious to every one, that during an acute disease of the stomach, the regulation of the diet must be considered as an important part of the treatment. It has been already stated that, at the commencement of the disease, no kind of food should be allowed; but after a day or two, when the inflammation begins to subside, a little mild farinaceous aliment may be taken, in small quantities at a time, such as thin arrow root, gruel, or any other bland article of this description of diet.

During convalescence the diet and regimen must be strictly attended to, and for several months afterwards very little animal food should be used; every thing stimulating ought to be carefully avoided. The diet should consist chiefly of farinaceous substances, with milk.

Chronic Inflammation of the Stomach is described under the head of Indigestion (see page 392).

STONE AND GRAVEL.

Stone and Gravel are the terms applied to concretions formed in the kidneys and bladder, by a morbid deposition from the urine. This fluid, when in a healthy state, contains in solution at least twelve different ingredients; of these, some belong to the class of acids, others are alkaline or earthy substances. Now, in certain morbid conditions of the system, the urine undergoes changes within the body; and some of these ingredients accumulate until they are no longer held in solution, but are deposited

in a solid form in the kidneys or bladder. The salts which form the depositions are chiefly of two classes, depending on two distinct states of the constitution, with which they are respectively associated. In the first class, which is by far the most common, the lithic, or uric acid, and lithates, more especially the lithate of ammonia, form the deposit which is called, in popular language, *red Gravel*, whether it appear in the form of sand or distinct concretions. In the second class, the deposition consists of the phosphatic salts; namely, the ammonio-magnesian and the phosphate of lime, generally the latter. This species of the disorder is known under the denomination of *white Gravel*.

In the great majority of cases, urinary concretions and calculi are formed in the hollow part of the kidney called the pelvis, sometimes in the substance of the organ. The calculous matter is either deposited in the form of sand, which passes off without giving much pain or inconvenience, or it assumes the form of small stones, which may remain in the kidney during a longer or shorter period; these, after a time, either escape from the kidney into the ureter, or tube which conveys the urine to the bladder, and cause the most severe pain during their passage to the latter organ (see Disease of the Kidney, page 412); or they may remain permanently in the kidney, and attain a considerable size. Sometimes they produce inflammation, which may terminate in abscess of the kidney; or they may cause chronic disease and wasting of the organ.

The passing of red sand or gravel is preceded, during a considerable length of time, by a copious deposition from the urine, of a tawny, reddish brown, or brick dust colour, or of a more or less vivid pink hue. The urine from which this sediment is precipitated, when first voided is generally clear, rather scanty, and high coloured. It is most frequently met with in children, and in persons beyond forty years of age.

Few subjects in medical science are involved in greater obscurity than the formation of Gravel. But the testimony of all the best medical men who have particularly attended to this disorder, concur in showing that red Gravel is more frequently met with in persons of sedentary habits, who indulge in eating animal and other kinds of nutritious food, and

drink freely of wine and other strong liquors, than among those who lead an active life and are temperate and abstemious. The following case, mentioned by M. Magendie, will illustrate the connexion which exists between Gravel and the mode of living :—M ——, a rich merchant in one of the Hanseatic towns, gave himself up to the enjoyments of the table, and suffered in consequence from Gravel. In the year 1814, from some political causes, he suddenly lost his fortune, and was compelled to fly to England, where he lived for twelve months in great poverty; but the Gravel had disappeared. The industrious merchant, however, gradually recovered his lost wealth, and with it returned the Gravel. A second catastrophe again deprived him of the means of living luxuriously: on this occasion he took refuge in France, where the scanty diet soon cured him of his disease. Finally, he again succeeded in amassing some property, and gave himself up to the indulgences of the table; and again the change of diet brought back the original affection. This patient suffered from gout as well as from Gravel, and the former disease followed all the changes of the latter, constantly appearing and disappearing with it.

All authors who have written on this subject have noticed the intimate connection which exists between Gravel and gout; both diseases, in numerous instances, appear to derive their origin from the same source. The peculiar condition of constitution, whether derived from hereditary origin, or acquired by luxurious living, which is considered essential to the production of gout, is acknowledged on all hands to be of the same nature as that which is associated with Gravel. Sudden and frequent alternations of temperature, long exposure to cold and wet, and similar circumstances, are classed as predisposing causes of considerable influence; and this appears probable from the fact that Gravel complaints are more common in temperate than in very cold or warm climates; indeed, in the latter these disorders are scarcely known, probably owing to the free perspiration which is kept up by the constant heat. It has been well ascertained that the red Gravel occurs most frequently in persons whose skin is habitually harsh and dry; in fact a free and regular action of the skin seems almost incompatible with the occurrence of this form of the disorder. We have known

several instances of red Gravel being repeatedly produced by removing from a warm to a cold climate, and as often relieved by returning to the former. Indeed, it appears to us that, next to a well regulated diet, a free secretion from the skin is the most effective means not only of preventing but also of relieving Gravel complaints. The children of the working population of large towns are very subject to derangements of the urinary secretion, and this appears to be chiefly owing to the irregular and gross manner in which they are fed, as well as to neglect of suitable clothing and cleanliness, causes that by injuring the digestive organs, and impeding the skin in the due performance of its function, tend strongly to produce the acid state of the urine, on which the elaboration and deposition of red Gravel depend. Local causes operate powerfully in producing Gravel complaints; for example, it has been ascertained that these disorders occur more frequently in Norfolk than in any other part of Great Britain, while, on the other hand, the inhabitants of the city and county of Hereford are almost exempt from them. It also appears that more cases of stone are met with in the manufacturing town of Paisley than any where else in Scotland. But, although many curious facts have been ascertained of late years with regard to the comparative prevalence of Stone and Gravel in different localities, yet we remain entirely ignorant of the nature of the causes which produce a greater tendency to these disorders in one district than in another.

Although the urine may continue for a long time to deposit a red coloured sediment without the general health appearing to suffer, yet the individual should be on his guard, for this state of the urine indicates an unhealthy condition of the system, and, if not checked, will be sure, sooner or later, to terminate in the formation of Gravel in the kidney. This, as we have already mentioned, may be the source of very distressing and even dangerous disorders of that organ, or give rise to Stone in the bladder, one of the most painful affections to which the human body is liable. The individual therefore should take warning from those premonitory symptoms, and adopt the necessary measures to avert evils of so formidable a character. If he has been in the habit of indulging freely in the use of animal food, and drinking wine or malt liquor, and not taking sufficient exercise,

he must be induced to change his manner of living, otherwise gritty or sandy looking particles will make their appearance in the urine, and he will then become alarmed when the evil, which by timely means might have been warded off, has already commenced. Sedentary habits must be discontinued, and active exercise taken in the open air; the diet should be mild and sparing in quantity, and wine must be almost entirely abstained from. The bowels are to be kept open by mild purgatives, the functions of the skin are to be promoted by warm woollen clothing, daily friction with the flesh brush or horse hair glove, and the occasional use of a warm or tepid bath; in a word, every means should be adopted to promote the due performance of all the secretions; the supplies from eating and drinking, and the discharges whether by urine, perspiration, or by other channels, should be regulated in such a manner that the body shall not be oppressed with repletion, or exhausted by evacuation. The instructions given for the prevention of gout, at page 319, should be strictly followed in all cases where a morbid condition of the urine indicates a tendency in the system to the formation of red Gravel.

The medical treatment consists in the use of alkaline remedies, for the purpose of correcting the morbidly acid state of the stomach and of the urine; the medicines of this class usually employed are soda, potash, and magnesia; these are administered either to prevent the formation of red Gravel, where the state of the urine above described exists, or to palliate the symptoms where the disorder has already commenced. From half a drachm to a drachm of *bicarbonate* (commonly called carbonate) of *soda* or of *potash*, dissolved in from half a pint to a pint or more of barley water, toast water, rice water, linseed tea, decoction of quince-seed, or any other mild diluent, should be taken twice or thrice a day, according to circumstances, about two or three hours before or after eating, and continued daily for a considerable length of time. These alkaline salts may, in most cases, be taken for many months without deranging the digestive organs, and with much benefit to the patient's general health. If, however, the stomach become weakened from their long continued use, it will then be advisable to take them along with an *infusion of chamomile flowers*, or dissolved in a *decoction of gen-*

tian, or of *calumbo*. The manner of preparing and using these tonic remedies has been already pointed out in other parts of this volume. *Magnesia*, in doses of ten grains once or twice a day, has sometimes been found more serviceable than the carbonate of potash or of soda. Equal parts of *lime water* and *rennet-whey* constitute one of the best remedies that can be employed in this species of Gravel. Every alkaline medicine when taken for a long time is apt, in many cases, to disagree with the stomach ; it is therefore, in general, advisable to vary these remedies, rather than to persist long in the use of any one of them in particular.

The means to be adopted during a *fit of the Gravel* have been already pointed out at page 413.

The second kind of gravelly disorders, in which the urine deposits the phosphatic salts in the form of white sediment, or sand, generally depends on some constitutional derangement of a serious character, or on great irritation or organic disease of the urinary organs. In the first, or lithic acid Gravel, the urine is generally more or less scanty, high coloured, and deposits a red sediment ; here, on the contrary, it is of a pale colour, secreted abundantly, and deposits, when cool, a copious white sediment, sometimes white sand. The disease occurs most frequently among persons who have lived intemperately and have committed excesses in early life. Those who draw largely on the vital resources during youth, are sure to pave the way to various bodily discomforts and disorders in after life, and of all the ailments thus induced this is certainly one of the most distressing. This species of Gravel is also frequently met with among the ill fed and half clothed children of sickly or dissipated parents in the lower classes of society. The countenance of persons affected with red Gravel often appears florid and the appetite is good ; but in this form of the disorder the face is pale and appears careworn ; the patient is unfitted for any ordinary mental or bodily exertion ; he becomes irritable, discontented, and gradually loses flesh ; he has little or no appetite, and is troubled with flatulency, constipation, and other symptoms of indigestion. In this state of things the patient, if residing in a large town, should remove to a healthy part of the country, and remain as much as he can in the open air ; he may take daily a few glasses of wine,

or some sound malt liquor ; his diet should be nutritious, and composed of such articles as the stomach will most easily digest. Where the object is to invigorate the system and improve the general health, it would be impossible to lay down a general rule with regard to the kind of food which ought to be taken ; this must depend on the peculiarities of constitution and previous habits of each individual. As the celebrated Van Swieten justly remarks, " to assert a thing to be wholesome without a knowledge of the condition of the person for whom it is intended, is like a sailor pronouncing the wind to be fair without knowing to what port the vessel is bound."

To quiet the irritability of the system which always accompanies this form of the disorder, *opium* will be found an invaluable remedy ; it may be given to the extent of two or three grains daily until the irritation is in a great measure quieted. To correct the predominance of alkali or alkaline earths in the urine, it is usual to prescribe acids. Ten drops of *diluted muriatic acid*, or the same quantity of *elixir of vitriol* or *diluted nitric acid*, may be given three times a day in an *infusion of gentian* or *calumbo*. Saline purgatives, soda powders, and all alkaline remedies should be carefully avoided.

STONE IN THE BLADDER arises in the great majority of cases from a portion of gravel having passed from the kidney along the ureter to the bladder, and there gradually increased in size by successive depositions upon its surface ; sometimes it originates in the bladder, and occasionally the nucleus of the Stone consists of a clot of blood, or a foreign body which has accidentally got into the bladder, such as the broken end of a catheter, or a portion of a bougie.

The immediate relief which follows the escape of a small Stone from the kidney into the bladder, often deceives the patient, and leads him to believe that all danger is past. The means most likely to secure the passage of the Stone out of the body are not resorted to, and this neglect is generally fraught with consequences of the most distressing and ultimately dangerous nature. In general the Stone is expelled from the body shortly after it reaches the bladder, and in its passage along the urethra occasions more or less pain, according to size, form, and

other circumstances ; but unfortunately this favourable termination does not always take place, the Stone often remains in the bladder, and for a long time may give neither pain nor inconvenience. But, by degrees, fresh matter is deposited upon the surface, and its size is thus increased until there is no longer any possibility of its escape through the natural passages. When, therefore, the patient has reason to suppose that the Stone has not been discharged along with the urine, within ten days or a fortnight from the determination of a fit of the gravel (see page 412), it then becomes him to adopt the necessary measures for its removal. In the first instance the surgeon searches the bladder with a metallic instrument called a sound ; if no Stone be felt, the patient has then no occasion to be alarmed ; it only remains for him to persevere in the measure already pointed out, in order to prevent another attack of the disorder. If a Stone be discovered he must live very sparingly, drink freely of linseed tea or any other demulcent fluid, and take the remedies above directed according to the circumstances of the case. He should retain his urine until the bladder is as full as it can be borne, and, resting on his hands and knees, should repeatedly move his body in various positions, and thus endeavour to remove the Stone from the part of the bladder where it is lodged ; he should then make water suddenly and with sufficient force to propel it in a full stream ; by these means the Stone has frequently been known to pass off along with the urine. If these measures fail, the surgeon introduces an instrument into the bladder and extracts the stone through the urethra ; or if he cannot succeed in this, he crushes it so that it may be discharged with the urine.

Should timely measures not be adopted to remove the Stone, a train of painful symptoms are sooner or latter manifested, and the patient's life is rendered miserable. At first a dull uneasy sensation is occasionally felt about the neck of the bladder, at the lower part of the belly, or in the groin, and the patient experiences an unusually frequent desire to make water. The symptoms soon undergo a change for the worse, the desire to make water becomes more frequent and urgent, with an inclination to empty the bowels at the same time. While the urine is flowing, the stream is suddenly stopped, so that it is expelled, as it were, by

fits, the expulsion of the last drops being attended with excruciating pain. The urine is mixed with mucus and is often tinged with blood, particularly after exercise ; pain is frequently felt at the point of the penis, more especially after making water, walking, or taking any ordinary bodily exercise. "This pain," says Sir Benjamin Brodie, "is one of the most marked symptoms of the disease. A child, who labours under Stone, tells you of it, not in words but in his actions. He is always pulling at the end of the penis, and pinching it with his fingers, even so as to cause the prepuce (foreskin) to become elongated. You often find his fingers with the skin soft and sodden, as if they had been soaked in water, from the urine which has been imbibed."

The suffering is greatly aggravated by the motion of a carriage or riding on horseback. But although these symptoms render the existence of a Stone in the Bladder exceedingly probable, they may nevertheless arise from other disorders. "Pain in making water," says Sir James Earle, "and not being able to discharge the urine without the faeces, are common consequences of irritation of parts about the neck of the bladder, from a diseased prostate gland and other causes. The urine stopping in a full stream is frequently caused by a Stone altering its situation, so as to obstruct the passage ; but the same thing may happen from a tumour or fungus in the bladder. I have seen an instance of this, where a tumour hanging by a small pedicle, would sometimes cause obstruction, and by altering the posture would retire, and give a free passage. The dull pain at the neck of the bladder, and the sensation of pressure on the rectum, are frequently owing to the weight of the Stone, &c. ; but these may proceed from a diseased enlargement of the prostate gland. Children generally, and grown persons frequently, are subject to prolapsus ani (falling down of the lower bowel), from the irritation of a Stone in the Bladder ; but it will likewise be produced by any irritation of those parts. The least fallible sign," continues the writer, "which I have remarked, is the patient making the first portion of urine with ease, and complaining of great pain coming on when the last drops are expelled. This may readily be accounted for, from the bladder being at first defended from contact with the Stone by the urine, and, at last being pressed naked against it. But, to put the matter out

of all doubt, and actually to prove the existence of a Stone in the Bladder, we must have recourse to the operation of sounding."

If the Stone be not removed by an operation, the bladder becomes highly irritable, the sleep is disturbed by frequent calls to void the urine, the appetite fails, the digestive powers give way, and general constitutional disturbance supervenes; at last the mucous or lining membrane of the bladder becomes inflamed, the urine exhales an offensive alkalescent smell and deposits a thick mucous sediment streaked with blood, hectic fever is lighted up, the patient becomes greatly exhausted, and dies.

A patient affected with Stone in the Bladder may do much to palliate the painful symptoms to which it gives rise, by strict attention to diet, and the judicious use of medicine. Whatever remedies are employed, they should be directed to correct the particular states of the constitution on which the formation of different kinds of Stone depend. If the lithic acid condition of the urine predominate, which is generally the case, the alkaline remedies already directed should be had recourse to, not with the expectation of dissolving the Stone, but of restoring the urine to its healthy state, and improving the general health. Sir Benjamin Brodie recommends great care to be taken in proportioning the doses of these remedies to the particular circumstances of each case. "If you give too little of the alkali the result is not obtained, and the lithic acid is still deposited, although in smaller quantity; if you give too much, you not only prevent the formation of the red sand, but you render the urine alkaline, and a white sand is deposited in its place." "You should," continues Sir Benjamin, "be provided with paper, coloured blue by an infusion of litmus; and also with the same paper, slightly reddened by immersion in a very weak acid. Healthy urine ought to turn the blue litmus paper a little red; and you ought not to give alkaline remedies in such a dose as to destroy this property altogether; still less ought you to render the urine alkaline. If the urine turns the red paper blue, the patient is in danger of suffering from a deposition of the phosphates; and the alkalies must be given in smaller quantity." This celebrated surgeon, however, is of opinion that more benefit is to be derived from proper diet and mode of living than from medicine. Dr. Prout, another high authority in urinary

disorders, believes that errors in the quantity of food are more injurious than errors in quality; he says that patients should abstain altogether from things which manifestly disagree with them and which must be unwholesome to all, such as heavy unfermented bread, hard-boiled and fat puddings, salted and dried meats, acescent fruits, and (if the digestive organs be debilitated) soups of every kind. He says that, in general, wines should not be taken, more especially those of an acescent quality. The wearing of flannel, the preserving a regular state of the bowels, and the occasional use of alterative medicines are also enjoined. These means are to be persisted in till the urine assume its natural state. When the morbid condition of the system which is associated with the predominance of acid in the urine is once fairly broken, it may in general be easily prevented from recurring by attention to diet, and by the occasional use of medicines ; " and the patient will scarcely know," says Dr. Prout, " that he has a Stone in the Bladder ; at least from the pain that it gives him. I state this with confidence ; but at the same time I wish to be understood to mean, that the freedom from pain, &c., depend in no inconsiderable degree upon the size of the Stone, its smoothness, upon the exercise a patient is obliged to take, &c., all of which are presumed to be favourable ; for it must be sufficiently obvious, that a foreign substance in the bladder cannot be prevented from acting mechanically, and from occasionally producing bloody urine, or a temporary stoppage of the discharge of that secretion from the bladder, and similar symptoms, if the patient is obliged to take severe exercise."

Surgery possesses two methods of extracting a Stone lodged in the bladder. The *first* is *Lithotomy*, an operation which consists in making an incision into the bladder sufficiently large to allow the surgeon to lay hold of the Stone with forceps and extract it entire. The *second* is *Lithotrity*, which consists in breaking the Stone within the bladder, by means of certain instruments constructed for the purpose, so that the fragments may be discharged from the bladder by the natural passage (urethra). The latter operation is considered one of the greatest achievements of modern surgery ; it was first suggested by Gruithuisen, a German surgeon, and our own countryman, Mr. Elderton. In 1825, M. Leroy d'Etiolle invented certain instru-

ments with which M. Civiale, of Paris, in the following year performed the operation for the first time on the living body. Lithotritry however cannot always be substituted for lithotomy ; the former is best adapted to Stones of moderate size. Mr. Costello, of London, is deservedly considered the best lithotritist in this country, and has been very successful in performing this bloodless operation.

STRICTURE OF THE URETHRA.

When a part of the canal or *urethra* which conveys the urine from the bladder out of the body is rendered narrower than it is in a natural state, in consequence of morbid action or change of structure, the disorder is called Stricture. Writers on this subject generally agree in describing Strictures under three forms, the spasmodic, the inflammatory, and the permanent.

SPASMODIC STRICTURE not associated with inflammation is a rare disease. It comes on suddenly, and is not attended with pain until the patient attempts to make water. Various causes are said to give rise to this kind of Stricture ; it may proceed from exposure to cold and damp, excesses in drinking wine, spirits, &c., retaining the urine too long in the bladder, irritation of distant parts ; or " even an irritated state of mind, or a mind deeply engaged in study, will occasionally influence the nervous system to such a degree as to produce spasmodic Stricture of the Urethra." " A man who is otherwise healthy," says Sir B. Brodie, " voids his urine one day in a full stream ; on the following day perhaps he is exposed to cold and damp, or he dines out, and forgets, amid the company of his friends, the quantity of champagne or punch, or other liquor containing a combination of alcohol with a vegetable acid, which he drinks. On the next morning he finds himself unable to void his urine. If you send him to bed, apply warmth, and give him Dover's powder, it is not improbable that in the course of a few hours the urine will begin to flow. After the lapse of a few more hours, you give him a draught of infusion of senna and Epsom salts, and when this has acted on the bowels he makes water in a full stream."

TREATMENT. " You should introduce a bougie," says Sir A. Cooper, " letting it steal gently along the urinary passage, and

when it arrives at the strictured part there let it rest for a short time ; after this, you should gradually push it forward, using only a very slight force, but continuing that force until you have succeeded in passing the Stricture. Let the bougie rest for a minute or two in the strictured part, and then withdraw it ; directly that you do so, the person will be enabled freely to pass his urine. If you have not a bougie at hand, you may employ a catheter, and it will answer equally well ; you must take care, however, to use it gently, as I have just described." The chief point to be attended to in such cases is not to irritate the parts by attempting to pass the Stricture with a bougie, or to reach the bladder with a catheter. If much resistance be offered to the introduction of instruments, it will be better to have recourse to other means rather than persist in overcoming the obstacle by using force. The bowels should be well cleared out by means of copious injections of warm water, and afterwards a clyster consisting of fifty or sixty drops of laudanum with a wineglassful of warm water should be administered, or from forty to fifty drops of this medicine may be given by the mouth ; and the dose may be repeated after a few hours, if the patient be not relieved (see Urine, Retention of).

INFLAMMATORY STRICTURE. Persons who indulge too freely at table, while labouring under chronic gonorrhœa or gleet, are most liable to this kind of obstruction ; it may also occur during acute gonorrhœa, in consequence of inflammatory swelling of the mucous or lining membrane of the urethra, and may follow the introduction of a bougie. It is generally associated with the spasmodic form of the disease above described, is quick in its approach, and accompanied with severe pain.

TREATMENT. The treatment in this case consists in *drawing blood* freely from the arm, if the patient be young or of a robust habit of body ; in opening the bowels with an *infusion of senna and salts*, or by means of *purgative clysters* ; in the application of fifteen or twenty *leeches* round the perinæum ; and in the use of the warm bath. The enema with laudanum should be employed as above directed, and much benefit will be derived from keeping up a slight degree of sickness at stomach by frequent doses of the tartar emetic mixture (see page 425, No. 243). Sir A. Cooper, Sir B. Brodie, and also the best French surgeons, condemn the

practice of using the catheter or bougie while the urethra is in a state of inflammation. Mr. Guthrie, on the other hand, employs the catheter in every case of retention of urine, but deprecates force as being unnecessary. "It is," he says, "by lightness of hand, and dexterity in the use of your instrument, that you gain your point." If he fail in introducing the instrument into the bladder, he then resorts to the means above mentioned. But although Mr. Guthrie, and other able surgeons, may succeed in relieving the extreme suffering of the patient by means of the catheter, yet, in less skillful hands it will be more likely to aggravate the inflammation than to afford relief.

PERMANENT STRICTURE. This is by far the most common form of Stricture, and in the great majority of cases proceeds from gleet or frequent attacks of gonorrhœa. Sir Astley Cooper states, that it arises from the latter disorder in ninety-nine cases out of a hundred. Astringent injections employed in the cure of gonorrhœa and gleet were formerly supposed to be frequent causes of Stricture, but experience has shown that they have been often condemned without sufficient reason. On this point Sir B. Brodie, who is deservedly considered a high authority on diseases of the urinary organs, states that "permanent Stricture frequently follows an obstinate gonorrhœa. Astringent injections have been sometimes considered to be the cause of this disease; but," says this able surgeon, "I certainly believe that more blame has been attached to them than they really merit. It is the abuse, and not the use of injections, which is to be deprecated. I have no hesitation in saying, that there is greater danger as to the production of stricture from a very long continued gonorrhœa or gleet, than from the prudent use of a mild astringent injection." This is also the opinion of M. Ricord, of the Venereal Hospital of Paris, who is perhaps the first French authority on the subject.

The number of Strictures varies in different cases. The usual number is one or at most two; but cases have occurred where six or even more existed at the same time. The form of Stricture also differs. In the callous or indurated Stricture the whole circumference of the passage, or only a part, may be affected. Some Strictures are confined to a small part of the circumference of the urethra, or they may occupy from half an inch to an inch

of the canal, in other instances again the stricture is formed by a small band stretching across the urethra.

Sir Everard Home states that Strictures occur most commonly at the distance of six and a half or seven inches from the external orifice at the point of the penis. The situation next in the order of frequency is about four and a half inches from the orifice. Sometimes the obstruction exists close to the extremity of the canal, or at the distance of three and a half inches.

It frequently happens that persons, either from ignorance or inattention, are affected with Stricture for a considerable length of time without their knowledge. But, as the disorder gains ground, the symptoms become sufficiently urgent to attract the patient's attention, and convince him of the nature of his ailment; they are thus described by Sir A. Cooper:—"At the commencement of every permanent Stricture, you are made acquainted with the real nature of the complaint by the following symptoms: The first is, the retention of a few drops of urine in the urethra, after the whole appears to have been discharged, so that when the penis has been returned into the small clothes, the linen becomes slightly wetted, and if you press on the under side of the urethra, a few drops more will be voided, which had collected between the bladder and that part of the urethra where the Stricture is situated. The next circumstance you notice is an irritable state of the bladder; this is evinced by the person not being enabled to sleep so long as usual without discharging his urine. A man in health will sleep for seven, eight, or nine hours without being obliged to empty his bladder, but when he has a Stricture, he cannot continue for a longer period than four or five hours, and frequently much less even than this. The next circumstance observable is the division of the stream, the reason of which is that the urethra is in an uneven state from the irregular swelling that surrounds it, and consequently the urine is thrown with an inequality of force against its different sides; sometimes the stream splits into two, becoming forked; sometimes it is spiral, at other times it forms as it were a thin sheath. Occasionally the stream rises perpendicularly, its long axis being at right angles to the long axis of the penis; thus, then, the retention of a few drops of urine after the whole appears to have been discharged, a more frequent propensity to make water than when in

health, and the peculiar character of the stream, as just described to you, will be conclusive evidence of the existence of Stricture. In addition, there will sometimes be a discharge from the urethra, which renders the linen of a bluish white, similar to the appearances produced by nocturnal emissions: if the individual rides much on horseback the urine will be high-coloured, depending upon the degree of excitement existing in the urethra. The next thing which the patient notices is, that he discharges his urine by drops; and, from the irritable state of the bladder, the water is constantly dropping or distilling away from the orifice of the urethra. An individual, then, having permanent Stricture, first observes a few drops of water remain after the whole seems to have been discharged, then notices a fine spiral or divided stream, and lastly discharges his water by drops only."

TREATMENT. It must not be supposed that every case of Stricture requires treatment; because it not unfrequently happens that, although the circumference of the canal is slightly diminished, and the stream of urine is more or less irregular, yet the disorder is *definitive*, that is to say, it has no tendency to increase, is not accompanied with any discharge, and does not interfere with functions of the urinary and spermatic organs. Under these circumstances, the ordinary means of treatment, instead of proving serviceable, would be more likely to irritate the parts, and do mischief.

Various plans have been proposed for the cure of permanent Stricture, but almost the only method of treatment now employed is the gradual dilatation of the part by means of bougies. These are long, smooth, slender instruments, made of wax, of metal, of elastic gum, or of ivory rendered soft by a chemical process, and are numbered, according to their size, from one up to sixteen; it seldom happens that a larger size than number thirteen is found necessary.

The first thing to be done is to ascertain the situation of the Stricture, by passing a common-sized bougie into the urethra. The introduction of this instrument requires considerable caution and address; it should be first warmed before the fire, or dipped in warm water, then smeared with olive oil, or lard; if made of wax, it should be slightly curved in the form of a catheter, and is then to be gently passed along the canal until the Stricture

prevents it from proceeding farther ; it is then to be withdrawn. On the following day, a small conical or taper-shaped gum-elastic bougie (see the annexed cut) is to be introduced ; it should be of the same size as the stream of urine, and, being previously greased as above directed, is to be carefully passed along the urethra. When it reaches the Stricture it should be allowed to rest a little, and is then to be pushed gently forward ; if resistance be still offered it must be again allowed to rest for a minute or two, so as to avoid producing irritation or pain. If we succeed in introducing the instrument through the Stricture, the cure is then in our power ; but sometimes this cannot be effected without repeated trials and a great deal of trouble. When the bougie is introduced, it becomes tightly grasped by the Stricture, and the patient is to retain it in that position until it passes through the Stricture easily ; this generally soon takes place, in many cases only a few minutes are required, it is then to be gently withdrawn. On the next day, or not until the expiration of two or three days, if irritation occur, the same bougie is to be again introduced, and if it pass easily, one a little larger is to be employed, and the same directions followed. In this manner the treatment is to be conducted, substituting successively larger bougies, always taking care to allow sufficient time to elapse between each introduction, in order to avoid irritation of the urethra ; should this arise, the employment of a larger instrument is to be deferred until the symptoms of reaction pass off. By thus steadily but cautiously persevering in the introduction of bougies, the Stricture will be at length overcome, and the largest bougie may be passed with facility. Five or six weeks, or perhaps a considerably longer period, may be required to complete the cure ; but this mode of treatment, though slow, is safe, and very successful. No attempt should ever be made to get rid of a Stricture suddenly, because it has been well ascertained that the dilatation is the more durable the more slowly it has been effected.

After the Stricture is relieved the patient should pass a bougie

or a catheter, once or twice a week, for a fortnight or three weeks, and afterwards at longer intervals. Should the stream of urine at any time diminish, he must again have recourse to the gradual process of dilatation above described, until the cure be permanent.

In long neglected Strictures it sometimes happens that even the smallest instrument cannot be introduced into the bladder. In cases of this description much benefit will be derived from very carefully introducing a bougie every day, and gently pressing on the face of the Stricture. By patiently persevering in this mode of treatment a depression is made on the anterior part of the Stricture, and alternately the bougie will penetrate the constricted part. The cure may then be completed by gradually dilating the Stricture as already directed. Sometimes five or six weeks are required in obstinate cases before the instrument can be passed, but in general the obstruction is soon overcome. It is a remarkable fact that the beneficial influence of this treatment is experienced before the bougie has passed the Stricture. Even when the symptoms of retention of urine are very alarming, they gradually yield to the influence exercised by continued daily pressure with the extremity of the bougie, the evacuation of urine becomes easy and gradually re-established, although the Stricture still resists the introduction of the instrument.

Surgeons were formerly in the habit of destroying Strictures by means of bougies armed with caustic, but this plan of treatment is not so safe as that above described, and is now very seldom employed unless in complicated cases of the worst description.

STYE.

A Sty is simply a small boil projecting from the edge of the eyelid. It is of a dark red colour, hard, and accompanied at the commencement with a sensation of itching. After some time this last symptom is followed by pain, which is usually more severe than the small size of the swelling would lead us to expect, and from the tension and exquisite sensibility of the skin covering the edge of the eyelids, becomes sometimes so exceedingly acute, that in delicate and irritable children it causes a degree of feverish excitement to be lighted up, which renders the patient restless and fretful. Matter forms slowly, but at last the tumour

is observed to point, that is to say, a small white speck appears on its most prominent part. After a longer or shorter period, sometimes two or three days, it bursts, and a small quantity of matter is discharged, along with a little mass of disorganised cellular membrane, commonly called the *core*; the swelling then subsides, and the eyelid soon resumes its natural appearance. But it often happens that only a small quantity of curdy looking matter is discharged, and the core is retained within the tumour; the opening heals, and the swelling continues for a considerable length of time. In other cases, again, the suppurative process advances slowly, and the Styte remains hard and painful, without showing the slightest disposition to point, or to undergo any further change.

CAUSES. Styte occurs most frequently in fair complexioned children, and in those of a scrofulous habit of body. In more advanced life it is usually connected with a disordered condition of the digestive organs, and is generally seen in those who sit up late at night, and indulge freely in eating and drinking.

TREATMENT. The administration of an *emetic of ipecacuan*, followed by a smart purge of *calomel* and *jalap*, or the *black draught* (page 32); and the constant application of *Goulard water*, or vinegar and water, to the eye, if employed early, sometimes prevent the inflammation from terminating in suppuration; but in most cases no kind of treatment succeeds in arresting its progress.

If, therefore, the above means should not produce the desired effect, and suppuration appears to be advancing, it will be advisable to discontinue the cold lotion, and apply warm poultices of bread and water, or of linseed meal, inclosed in a small linen bag. A fresh poultice should be applied at least three or four times in the course of twenty-four hours, and each time the eye must be well fomented with warm milk and water. These local applications are to be assiduously employed until the suppurative process is completed, and the matter discharged.

In tedious cases, if a small white point appear, or if there be reason to suppose that suppuration has taken place, it will be proper to open the little abscess with the point of a lancet, and then squeeze out the matter along with the loose cellular substance or core. Sometimes a small piece of dead yellowish look-

ing cellular membrane adheres to the bottom of the cavity, and cannot be pressed out; this is a portion of the core which must be destroyed before the part can heal. The plan of doing this is to touch it with a sharp pointed piece of *lunar caustic*, or it may be slightly moistened with sulphuric, or nitric, acid by means of a camel hair pencil.

When the Styte remains in an indolent condition, and shows no disposition either to advance or recede, the best plan, next to that of laying open the tumour with a lancet, and squeezing out its contents, an operation to which few patients are willing to submit, is to rub the part gently every night at bed-time with a little *mild citrine ointment*; this stimulating application has either the effect of discussing the tumour, by promoting absorption, or, which is more frequently the case, it hastens the suppurative process.

Some scrofulous children are seldom free from small swellings in the eyelids; these occasionally suppurate, at other times they remain in an indolent state, without being painful. In the latter case the popular plan of frequently rubbing the indurated part with a plain gold ring, or any other hard polished substance, has often the effect of curing it. But in such cases local treatment, of whatever description, can only produce a temporary good effect; the object should be to correct, as far as lies in our power, the condition of the system on which the local disorder depends. Many persons who indulge habitually in drinking spirituous liquors are very subject to frequent attacks of Styte, but to them we have no advice to offer, because they know well that this disorder is one of the many penalties which result from their manner of living, and that it may be entirely avoided by temperance and early going to bed.

SUBCARBONATE OF AMMONIA.

The subcarbonate of Ammonia, or Hartshorn, is a powerful stimulant and antispasmodic. It is sometimes employed as a sudorific, but is more frequently used as a stimulating, application to the nostrils in fainting (*sal volatile*). The dose of this salt is from five, to fifteen, or even twenty grains.

The aromatic spirit of Ammonia is a more agreeable stimulant

than spirit of Hartshorn, and is employed in weakness of the stomach, languor, fainting, flatulent colic, hysterics, and other nervous disorders. The dose is from half a drachm to a drachm in a wineglassful of water, and repeated from time to time until relief is obtained.

Liquid Hartshorn mixed with olive oil forms the *volatile liniment*, a useful external application for sore throat. All the preparations of Ammonia should be kept in stoppered phials.

SULPHUR.

Sulphur is a simple combustible substance found in great plenty in the neighbourhood of volcanoes. It is chiefly brought to this country from Sicily and Naples.

Sublimed Sulphur, commonly called the flowers of Sulphur, acts as a mild laxative and promotes the insensible perspiration. It pervades the whole system, and transpires through the pores of the skin, as appears from the smell which exhales from the bodies of persons who are under its influence, and by staining silver in the pocket of a blackish colour. Equal parts of Sulphur and magnesia (fifteen grains or a scruple of each) taken every night at bed-time affords great relief in piles.

This remedy, employed both internally and externally, has long been celebrated for its power of curing the itch and other diseases of the skin (see Itch). When taken alone for some time it produces a slight degree of feverish excitement, hence its use should be discontinued occasionally, and a Seidlitz powder or some other saline medicine administered. The dose, as a laxative, is one or two drachms in milk, or mixed with treacle, jelly, or some kind of conserve.

SULPHURIC ACID.

This acid is generally administered in the form of *Elixir of Vitriol*, which is an excellent tonic in the dose of from ten to twenty drops, twice or thrice a day, in a cupful of cold water. It is sometimes of very great service in indigestion, where bitter and aromatic remedies have failed to produce any good effect; and is employed in spitting of blood, and to check excessive per-

spiration. It may be advantageously combined with the decoction of Peruvian bark, or of quassia.

Women, when suckling ought not to take this medicine, because it acts on the system of the infant, producing griping, and sometimes convulsions.

SUPPOSITORIES.

Suppositories are medicinal substances introduced in a solid form into the rectum (see page 382), there to remain and dissolve gradually. In this manner opium, the extracts of henbane, hemlock, &c., are employed to relieve the pain and irritation arising from diseases of the lower bowel, the womb, the bladder, the prostate gland, and adjacent parts. Aloes and soap are sometimes introduced as a Suppository to destroy the small thread worms called *ascarides*.

SWEET SPIRIT OF NITRE.

Sweet Spirit of Nitre is obtained by distilling alcohol and nitrous acid ; it is an excellent sudorific in the dose of a drachm and a half or two drachms, along with a basin of warm gruel, or some other warm drink, at bed-time. When taken in this manner at the *commencement* of a common cold, it generally succeeds in arresting the progress of the disorder. This medicine also acts as a diuretic when given in smaller doses frequently repeated, mixed with cold water ; but is more frequently used to correct or promote the action of more powerful diuretics in dropsy.

SYPHILIS, OR VENEREAL DISEASE.

From obvious reasons, which it is unnecessary to enumerate in a work like the present, there are few complaints either more prevalent amongst, or more interesting to, the public than the Venereal disease. Some persons may think that we should not touch on such delicate matters in a work intended for popular use ; but we are of a contrary opinion. The business of the medical man is to relieve the bodily sufferings of his fellow men, without inquiring how those sufferings may have been produced, or how far the individual may have been guilty of entailing them

on himself; his duty is simply to prevent or cure disease, by medical counsel or the administration of remedies, and he may, with a safe conscience, reject all other considerations, provided he can attain the great object of his labours—the restoration of health.

The Venereal disease, or Syphilis, arises from the introduction of a peculiar animal poison into the system. The manner in which the poison, or virus, is generally introduced, is too well known to require description.

The writings of various authors teach us that from the earliest times there existed sores and other disorders on the genital parts, usually produced by impure contact; whether these were really examples of the Venereal disease it is now impossible to say; the descriptions given by ancient writers are too imperfect to enable us to speak with any certainty on this point. We have, however, very satisfactory proof that the disease, such as it exists at the present day, was brought to Europe from the island of Hispaniola, in the year 1493, by the followers of Columbus; from Spain it was imported into Italy, from Italy it extended into France, after the capture of Naples by the French army, and soon spread rapidly over all parts of civilised Europe. As early as the year 1496 this disease seems to have penetrated into Britain, and it was in the following year (1497) that James the Fourth of Scotland, in consequence of the dreadful prevalence of the malady in Edinburgh, issued a proclamation banishing all infected persons to the island of Inchkeith, “thair to remane quhill God provyd for their health.”

In perusing the early history of the Venereal disease, it is impossible not to be struck with the fact, that, on its first appearance, it spread with extraordinary rapidity over various countries, and amongst all ranks of society. This may be partly explained by the state of licentiousness which pervaded all classes during these times; it was, however, believed by many that the disease could be communicated through the atmosphere; and hence, as Dr. Weatherhead informs us, the medical practitioners of the time did not scruple to publish the cases of princes, abbots, bishops, cardinals, and even popes, who laboured under the Venereal disease.

During a century, the Venereal disease continued to rage with

little abatement in the violence of its symptoms, or in the extent of its prevalence ; gradually, however, the complaint became milder, and at the present day has lost, under judicious treatment, a great portion of that virulent character by which it was originally distinguished.

From the Registrar-General's reports, it appears that only 73 individuals (30 males and 43 females) died of this disease in England, from July, 1837, to June, 1838.

CHANCRE. As we have already observed, Syphilis arises from the effects of an animal poison on the body. The poisonous matter is placed in contact with some part of the genital apparatus and there excites a sore, which secretes poisonous matter similar to that which first gave rise to the sore ; after a certain lapse of time the poisoned matter is taken up, mixes with the blood, and produces a regular succession of disorders or secondary affections in the skin, throat, or other parts of the body. The sore produced by the application of the syphilitic virus to the skin is called a *chancre*, but it does not follow that every sore which may appear on the genital parts after impure connexion is of necessity a syphilitic sore or a chancre : hence, a very important question presents itself—viz., by what means can we distinguish simple sores from the true Venereal ulcer or chancre. This, unfortunately, is a question more easily asked than answered. It is true that the medical man can always ascertain the virulent nature of a sore by inoculation ; but this is an experiment which people out of the medical profession should never venture to make ; it will therefore be more prudent for such persons, as a general rule, to regard *all* sores on the genital organs as syphilitic, provided they treat them in the manner presently to be described.

We have laid down this rule on account of the extreme difficulty of distinguishing simple from syphilitic sores of the genital parts by their appearances alone ; even the most experienced medical man will often be at a loss to affirm whether any particular sore will be followed by constitutional symptoms or not, because the sore does not always present such characters as will enable him to decide the point ; still there are some circumstances which assist us in forming an opinion, and these we shall now explain for the comfort of the patient.

In many cases immediately after coitus, the prepuce, and particularly the frænum, are more or less torn or excoriated, and these injuries soon assume the appearance of ulcers. The virus, it is true, may be lodged on the injured part, and afterwards give rise to chancre; but when the sore is perceived within a few hours after the act, when it is irregular, very superficial, and at the same time extensive, it is probably a common ulcer, not a syphilitic one.

The progress of the sore will also assist better in deciding upon its nature than any external characters. The true Venereal ulcer commonly pursues a certain course for some time, and is not much influenced by ordinary applications; hence, says Mr. Colles, "if an ulcer be not interfered with by any stimulant or caustic application, and after eight or ten days it shews no disposition to heal, and if at the same time there be an absence of any cause (such as defect in the general health) to account for this obstinate condition of the local disease, we may then pronounce the ulcer to be syphilitic."

Forms of Chancre. Although chancre is the effect of a specific virus it is far from presenting the same appearances in all cases; the character of the sore is influenced by a great variety of circumstances—by the constitution and previous habits of the patient—by the part of the genital organs on which the sore appears—by climate—and perhaps by the strength of the original virus. In scrofulous and irritable persons the sore is often very intractable and difficult to heal; in dissolute people whose constitutions have been broken down by a long course of dissipation, exposure to hardships, bad food, &c., chancres are very apt to turn into sloughing sores, which quickly destroy the adjacent parts.

The texture of the part on which a chancre may be seated also exercises some influence on its appearance. On the nut or glans penis the sore is usually regular and round; on the prepuce and skin of the penis chancres often spread to some size, without eating deeply into the part, and the whole base of the sore is hard; these chancres, as well as those which form on the external parts of generation in women, are commonly very difficult to heal, from the structure of the parts in which they occur. The same remark applies to chancres on the rim of the prepuce and on the frænum.

From the above brief observations it is manifest, that primary Venereal sores or chancres may present a great variety of appearances: it is unnecessary to confuse the reader with minute descriptions of these varieties; for all practical purposes it will be sufficient to distinguish the five following forms—viz., 1, the common chancre; 2, the indurated chancre; 3, the irritable; 4, the inflammatory; and 5, the sloughing chancre.

Indurated Chancre. This is the sore which has often been called the Hunterian chancre, because it was so perfectly described by the great John Hunter; it is supposed to constitute the most regular and perfect type of the Venereal ulcer, but is now met with much less frequently than in former years. In men chancres generally make their appearance on the glans penis, frænum, or at the angle between the skin and glâns, because these are the parts on which the virus is most easily retained; in some rare cases the virus gets into the urinary canal or urethra, and gives rise to a hidden chancre in that part; and this explains the fact why many persons are affected with constitutional symptoms who have never had any appearance of sore or ulcer on the external parts. In females the sores may occur on any part of the genital organs, in the vagina, or even as high up as the neck of the womb.

The interval between the application of the virus and its effects on the parts is very uncertain; in some few instances chancres appear within twenty-four hours after the application of the matter: generally speaking, the interval varies from three days to a week, but cases are on record where the disease did not appear until after several weeks. The first appearance of a chancre is generally indicated by an itching in the part where the sore is about to form; a small pimple then arises; this soon contains matter, and turns into a regular ulcer; the base of this ulcer feels hard when it is pressed between the fore-finger and thumb; the edges are regular, and the thickening of the tissues which surround it does not spread far into the neighbouring parts, but is very circumscribed; the edges of the ulcer are surrounded by a narrow line of inflammation (*areola*), somewhat similar to that which encircles the small pox pustule. These are the characters by which the true Venereal sore, or Hunterian chancre, are said to be distinguished; the bottom of the sore is usually

covered with a greyish-yellow coloured matter, which adheres *tenaciously* to the abraded surface, and differs evidently from common pus; after some time the secretion becomes altered, and the edges of the sore lose their sharp aspect and become rounded off, the inflammatory areola disappears, small granulations form on the surface of the sore, and it gradually heals, leaving a hardened red mark or cicatrix, which is very apt to break again.

Simple Chancre. This is the most common form in which the disease appears at the present day; in general features it resembles the Hunterian chancre, just described, but the base of the sore is free from *hardness*, and it is not attended with signs of irritation or inflammation.

In *irritable* chancre, the surface of the sore is red, and bleeds on the least touch; it is painful, often of irregular appearance, and has a tendency to spread whenever it is excited by irritating applications.

The *inflamed* chancre is nothing more than a simple Venereal sore when it is attacked by inflammation; here the sore, generally in consequence of excesses on the part of the patient, becomes painful, red, and swollen; the regular appearance of the sore is lost, the edges are removed by greyish or black sloughs and the secretions from the part are of a very acrid and irritating character.

Sloughing chancre generally occurs in persons of broken down constitution, or who have injured their health by debauchery and excesses of various kinds; it is also apt to occur in those who give themselves up to drinking, &c., while under the use of mercury: in cases of this kind the original sore and the surrounding parts are rapidly destroyed by foul sloughs or gangrene, and unless the utmost attention be paid, the unfortunate sufferer may lose the greater part of the sexual organ.

TREATMENT. The treatment of chancre is local and constitutional; we shall first speak of the local means, and instead of recommending a variety of remedies shall point out a few on which the greatest reliance may be placed. Chancre, as we have already remarked, depends on the application of a particular virus to certain parts of the body; this virus first excites a local sore, but four or five days may pass over before the virus is

taken up by the absorbing vessels, and passes into the blood, to produce what are called constitutional symptoms. We find the same occurrence with respect to other morbid poisons; in hydrophobia, for example, the rabid virus may remain in contact with the skin for a considerable length of time before it enters the system and gives rise to the disease, and it is well known to veterinary surgeons that the development of this dreadful malady may be frequently prevented by destroying the virus, even several hours after it has been in contact with a part.

This fact leads us to a first rule in the treatment of chancre. As soon as any sore or pimple appears on the sexual organs after impure coitus, it should be immediately cauterised, by passing over it lightly a stick of *lunar caustic*; this may be done twice in succession, but care should be taken not to press the caustic firmly on the sore, or carry it beyond the edges; our object is merely to destroy the *surface* which secretes the virus; a piece of fine dry lint should then be placed over the sore, and supported by any convenient bandage. When the eschar falls off, the caustic may be applied a second time in the same way, as a precaution. Even when the sore has existed for five or six days before it has been noticed, this mode of treatment may be employed. We should here observe that it is only applicable to simple and indurated chancre.

When the eschar has fallen off, the sore should be dressed with some mild astringent or gently stimulating application. The *zinc ointment*, weakened by the addition of one third part of spermaceti ointment, is a very useful one; some practitioners recommend the *black wash*; if there be much pain and soreness in the ulcer the following will be beneficial—

No. 291.

Prepared lard, eight ounces,
Wine of opium, half an ounce.

A weak solution of alum, applied with lint, also forms an excellent dressing. During the use of these means the patient should live as quietly as circumstances will permit him, and avoid all excesses in food, drink, exercise, &c. The dressings should be changed at least three times every day.

Under this treatment common chancre will usually heal in a

short time. The other forms of chancre require a somewhat different treatment, according to their nature. If the sore be of an *inflammatory* character, we must not think of applying caustic or any exciting remedies; the organ or ulcered part should be wrapped up in lint, moistened with tepid water or Goulard water, and covered with a piece of oiled silk; the patient should keep as much at rest as possible, live low, and take an opening draught (see page 32) occasionally; in some cases, where the inflammatory symptoms run very high, it may be even necessary to draw eight or ten ounces of blood from the arm. For *irritable* chancre the best local dressing is the opiate cerate (No. 291, page 665), already mentioned, or a strong aqueous solution of opium.

The *phagedenic* sore is the most formidable variety of Venereal ulcers; it generally depends on constitutional causes, and therefore local means will often avail less than general remedies. To improve the general health of the patient, he should be placed in pure free air, and have a good nutritious diet, with small quantities of wine or beer if the constitution be very much depressed; the dressing should consist of lint dipped in a solution of *two drachms of opium* in eight ounces of water, but this must not be changed too frequently for fear of irritating the parts; when the sloughs are extensive and the discharge very rapid, it will be right to surround the parts with a *carrot poultice*; and should the patient be irritable or disturbed at night, he may have from half a grain to a grain of *opium* at bed-time.

In this way the varieties of chancre are to be treated, until we reduce them to their simple state, when the local dressings recommended for simple chancre may be had recourse to.

We have now to speak of the *constitutional* treatment of chancre. When the means already mentioned have been applied *early* and assiduously, the patient has a great chance of escaping what is called secondary Syphilis, and, as a general rule, we would not advise the use of mercury for any primary Venereal sore except the indurated one. Experience shews that this form of sore is very often followed by secondary or constitutional symptoms, and that the cure of the sore itself is hastened by the use of mercury. It is impossible to lay down rules for the employment of this powerful remedy, which shall suit every individual case. Generally speaking, the safest preparation that

can be employed is the *blue pill*; of this the patient may take five grains night and morning, until the mercurial taste be perceived in the mouth and the gums are a little sore, when it should be discontinued; should the mercury, as it sometimes does, occasion much griping or purging, three grains of the extract of *henbane* or one fourth of a grain of *opium* may be added to the evening dose; it will not be advisable to push the mercury beyond touching the gums. The precautions to be observed during a course of mercury will be noticed when we treat of constitutional Syphilis.

Before arriving, however, at this important part of our subject, there are one or two points which must not be passed over here. In many males, the orifice of the prepuce or foreskin is naturally very narrow; a chancre occurs on the inner surface of the foreskin or glans, the surrounding parts inflame, and the skin cannot be drawn back so as to uncover the glans and enable us to see the chancre, while the confined matter not only aggravates the disease, but may excite additional sores in the parts upon which it lodges. In cases of this kind, a strong solution of *lunar caustic* (ten grains to the ounce of water) should be injected, twice a day, with a glass syringe, under the prepuce, so as, if possible, to reach all parts of the glans and internal surfaces; at the same time the whole of the glans should be enveloped in lint constantly moistened with *Goulard water*, or, if this cannot be had, common water. In severe cases of this kind the inflammation and swelling arrive at such a degree that mortification takes place, and a hole is formed, through which more or less of the glans is seen appearing; here the best application is the carrot poultice or the solution of opium already indicated.

In other cases of chancre, the contrary to what has been just described occurs; many patients have an idea that chancres of the glans and prepuce should be exposed; hence they keep the glans uncovered for a long time, and employ force in so doing; the consequence of this often is that the glans swells, while the foreskin becomes tightened around its root and cannot be brought forward in the natural way; this state of parts is called *paraphymosis*, and should never be neglected, for when it is allowed to continue long, the glans penis may be totally destroyed

by it. In the early stage the application of cold, and pressure of the glans between the fingers (so as to drive the blood inwards), will often suffice to reduce the parts to their natural state; if much inflammation be present, a dozen leeches may be applied around the inflamed ring; should these means prove unsuccessful, an operation must be attempted; fortunately, it is neither difficult nor dangerous; a narrow-bladed knife must be passed underneath the portion of skin which forms the stricture, in an horizontal direction, and the skin divided; the blade must lie flat on the organ, and when the point has passed beyond the ring of constricted skin, the blade should be turned upwards and the skin divided; in very severe cases it is better for a non-medical person to risk this simple operation than allow a portion of the penis to slough away; the wound will not require any dressing beyond lint and common ointment.

SECONDARY SYMPTOMS, OR CONSTITUTIONAL SYPHILIS.
Bubo. The virus which is secreted by a syphilitic sore may be taken up by the absorbent vessels of the part, and conveyed by them to one or more of the lymphatic glands situated in the groin, where it excites inflammation; the gland thus inflamed and swollen is called a *bubo*. This swelling generally commences on the second or third week after the appearance of the chancre; it may be ushered in by shivering and symptoms of fever; but, generally speaking, the patient's attention is first directed to it by some pain, stiffness, or uneasiness, about the groin, and on examination he finds a small knot or tumour; this gradually increases in size, and then as gradually disappears, or it may suppurate and break, continuing to discharge matter for weeks or months; in some cases, however, the *bubo* will remain obstinately stationary for a great length of time.

TREATMENT. As soon as a swelling in the groin is perceived after the existence of chancre, the proper treatment should be adopted without loss of time, for the chances of our preventing the tumour from bursting depend much on the *early* application of remedies. If the occupations of the patient will permit him, he should constantly rest on a sofa; if not, he should at least endeavour to avoid any kind of exercise as much as possible; cold applications should be made to the part, and the diet should be very abstemious. When, however, the tumour continues to

increase, is very painful, and the skin over it begins to get red, fifteen to twenty leeches must be applied to the bubo and repeated within two days if no well-marked effects are produced by the first leeching; should the patient be plethoric, and any general fever accompany the bubo, it may be necessary to draw blood from the arm. During the day lint moistened with *Goulard water* should be constantly applied, and the bowels should be opened twice a day with a cooling purgative. When the inflammatory symptoms have been relieved, the tumour may be covered with the *mercurial plaster*, or the *compound ammoniacal plaster*, and a drachm of *blue ointment* may be rubbed in over the swelling, every evening, for a quarter of an hour. When the bubo shows a disposition to become indolent, that is, neither to recede nor to advance, a blister should be placed on the tumour, and the blistered surface dressed with blue ointment; this may be done two or three times in succession, fresh blisters being applied as the old ones heal up. Instead of blistering the tumour we may employ frictions with the common *iodine ointment*; or apply lint soaked in the following solution—

No. 292.

Tincture of iodine, one scruple,
Distilled water, two ounces.

When, in spite of the means now pointed out, the tumour continues to increase, and at the same time the skin over the most prominent point gets livid and thin, suppuration has taken place, and, on pressing the finger over the thinned part, a sense of fluctuation will be felt; nothing can now be done but to give vent to the matter with the lancet. The treatment of the case must now, of course, change; in common cases the wound may be dressed with lint and spermaceti ointment; when the bubo is extremely painful, the skin red, and the discharge copious, fifteen or twenty leeches should be applied to the tumour, and rest, with low diet, enjoined; the sore may be covered with a light warm poultice, or lint soaked in tepid water. When the bubo shows a disposition to slough or ulcerate extensively, the same mode of treatment must be adopted as that which we have recommended for phagedenic chancre.

In persons of scrofulous constitution and ill habit of body, the

general health must be improved by change of air, nutritious diet, and the use of tonic remedies, particularly the preparations of iron (see page 403—4). Sometimes the tumour continues to discharge matter for a considerable time, and several openings communicating with deep fistulous sores are formed; here we should inject some stimulating solution into the cavity. Any of the following will answer for the purpose—

No. 293.

Sulphate of copper, six grains,
Water, one ounce.

No. 294.

Nitrate of silver, six grains,
Water, one ounce.

Or,

Sulphate of zinc, ten grains,
Water, one ounce.

Finally, when the edges and whole base of a suppurating bubo become hard and indurated like those of a chancre, we must have recourse to the internal use of mercury, in the way described at page 667.

In accordance with commonly received opinions, we have placed bubo amongst the secondary symptoms of the Venereal disease, although properly speaking it does not belong to them; for the matter of a syphilitic bubo will produce chancre, while that from secondary sores will have no such effect, and is incapable of communicating the disease.

Secondary symptoms, then, are those which make their appearance after the Venereal virus has been carried into the blood from a chancre, or syphilitic bubo; they very seldom come on before the second week, generally towards the fifth, sixth, or eighth week, but occasionally later. It is not easy to say what length of time may elapse between the occurrence of chancre, and the subsequent breaking out of secondary symptoms, still there is much reason to believe that the stories of confirmed Syphilis having appeared several years after infection are fabulous.

The probability of the occurrence of secondary symptoms is influenced by a variety of causes. The quicker the primary sore has been healed, the less is the chance of infection; this

has been well established, and we very seldom find that constitutional symptoms occur when a chancre has been healed within five days after its appearance. People who are addicted to drinking, and excesses of all kinds, are more subject to secondary disorders, and men much more so than women; finally, the indurated sore, or Hunterian chancre, gives rise to an infinitely greater proportion of secondary diseases than any other form of sore.

Constitutional or secondary Syphilis chiefly affects the mucous membranes, the skin, and, finally, bones with their investing membrane or *periosteum*. To describe the various forms which Syphilis assumes when it attacks these different parts would be foreign to the design of the present work; we shall, therefore, mention the principal of them only, then point out the *local* treatment suited to each, and conclude with an account of the manner in which mercury should be administered for their general or constitutional cure.

Sore Throat. This form of secondary Syphilis occurs very frequently, and is often mistaken for common sore throat; on looking into the back of the throat we see a dusky redness, and here and there circular or semi-circular patches covered with a whitish and very *tenacious* secretion; these patches often occupy the surface of each tonsil; they may remain indolent for a length of time, but sooner or later they ulcerate and form deep irregular sores; in ordinary cases the pain, inflammation, and swelling are much less than what we find in common sore throat.

The *local* treatment consists in using gargles, or in touching the sores with some stimulating application. As a gargle, the following will be found useful—

No. 295.

Diluted muriatic acid, one drachm,
Decoction of Cinchona bark, four ounces.

To stimulate the ulcers they may be touched occasionally with a strong solution of *lunar caustic*, or *sulphate of copper* (fifteen grains, to the ounce of water).

Syphilitic Eruptions. These are extremely numerous and varied in appearance; sometimes a crop of small spots like measles, at first red, but soon assuming a *coppery* hue, break

out over the body ; sometimes a number of little pips (*papules*) appear ; these are rosy at first, then copper-coloured also, and often dry up, forming little scales which constantly fall off and are renewed again. The eruptions now described often terminate in *pustules* of different kinds, which occasionally spread over the whole body ; the pus often dries on the surface of the sore, forming large scabs ; the edges of the pustule are hard and surrounded by a livid or coppery ring, and the sore burrows under the skin to some extent ; on the scalp these pustules often collect in small clusters about the roots of the hair, forming crusts, which are rubbed off and reproduced by the matter getting matted in the hair.

For the *local* treatment of these affections little can be done, as they are much more under the influence of constitutional remedies ; when the patient is in a condition that will admit of it, he should take a tepid bath twice a week ; when the eruption is old and obstinate, a pound of the *subcarbonate of potash* may be added to each bath. In the scaly eruptions which occur on the forehead, or other parts of the body exposed to view, we may hasten the cure by frictions with the blue ointment or the application of mercurial plaster.

Next to the skin and mucous membranes, the parts subject to constitutional Syphilis are the cellular tissue under the skin (*subcutaneous*) and the bones.

M. Ricord, the great French authority on Venereal diseases, has called these *tertiary* symptoms, because they occur after a much longer interval than the former, are seated in deeper parts of the body, and cannot be transmitted from mother to child.

The secondary symptoms of constitutional Syphilis may gradually merge into this form, or it may occur many months after chancre without any secondary affections having previously appeared. At a late period after the first occurrence of secondary symptoms, and in persons whose constitutions have been broken down by long continuance of the disease, small tumours form underneath the skin in various parts of the body, and in the mouth, throat, &c. ; after remaining indolent for some time these tumours inflame and are converted into foul ulcers ; as one heals up another breaks out, and the patient is exhausted by a

recurrence of obstinate sores, from which he endeavours in vain to free himself. When the sores now alluded to are seated over the bones they may occasion disease, or caries of the latter parts, and even death.

Affections of the Bones. The earliest notice that a patient has of the bones being affected by Syphilis consists in irregular pains of the part, which are chiefly felt during the night. The disease may attack the lining membrane of the bone, or the substance of the bone itself; it shows itself under the form of small tumours, which generally occur on the superficial bones, such as the skin or collar bones, the bones of the arm where they are thinly covered by skin, the breast bone and the forehead. The tumour arising from inflammation of the lining membrane of bone (*periosteum*) may gradually disappear or terminate in the formation of matter; while syphilitic inflammation of the bony substance often ends in destruction of the part of the bone attacked, with unsightly and obstinate sores.

The local treatment of syphilitic affections of the bones may be briefly described; in the first instance, when the pain is severe *leeches* must be frequently applied over the painful swelling or *node*, and then warm poultices; should the disease resist this treatment (and then it probably depends on affection of the bone), a blister should be applied over the painful spot, and when it has been removed, some lint smeared with *opium cerate* should be placed on the blistered surface; this often has a most beneficial and soothing effect; should matter form under the inflamed membrane, as is shown by the softness and feeling of fluctuation in the tumour, free incisions should be made along the swelling, and the matter evacuated.

CONSTITUTIONAL TREATMENT OF SECONDARY SYMPTOMS. Notwithstanding the various discussions which have taken place, during the last few years, relative to the treatment of Syphilis, with or without mercury, we believe it to be well ascertained that no mode of treatment possesses claims on our confidence superior to that with mercury.

It has been already stated that indurated chancre requires, from its commencement, a mercurial course; and we may here add, that when sores on the genital parts show a great indisposition to heal under simple treatment, it will, generally speaking,

be advisable to have recourse to the same remedy. The patient, however, should not, in any case, commence the use of mercury until the ulcer has ceased to spread, and the shining smoothed appearance of its edges show that it has some tendency to heal. This is the period at which we should commence the use of mercury for primary sores.

When secondary symptoms, such as coppery spots on the skin, sore throat, &c., make their appearance after chancre, mercury must be at once employed, with exception of the cases presently to be mentioned.

Mercury may be administered for the cure of Syphilis in either of two ways—viz., as an ointment by friction, or internally. The choice of the form in which this remedy should be used must depend on several circumstances; its internal administration is usually the more convenient; but some patients cannot bear mercury when taken into the stomach; in such cases, therefore, we must have recourse to frictions.

The method of employing mercurial inunction is very simple, from half a drachm to a drachm of *blue ointment* (mild mercurial ointment) should be rubbed in along the inner side of the thigh or leg before a fire, every alternate night. The frictions should be alternately on the lower extremities and in the direction of the hair, in order to avoid, as much as possible, irritation of the skin. In some cases where concealment is necessary, instead of friction on the legs, a drachm of the ointment may be placed in the armpit on going to bed.

The best preparation of mercury for internal use is the *blue pill*; of this, five grains in the form of pill may be taken night and morning. Should it cause pain in the bowels, or purging, a small quantity of opium (one sixth of a grain) may be added to each pill; but if the purging be severe, and continue for more than two or three days, the use of mercury must be suspended.

It now remains for us to explain what quantity of mercury should be taken for any given case, and how long its use should be continued. The determination of these two points must rest entirely on the effects which the remedy produces on the general health of the patient, and on the symptoms of his disease.

Formerly it was thought that profuse and long continued salivation was absolutely necessary for the purification of the

blood from the syphilitic poison ; the consequences of this mistaken idea were most disastrous ; the patient, however, may rest assured that milder means are equally, nay, more efficacious. When mercury is taken for a primary sore, it may be discontinued as soon as the sore has healed up, and all hardness has disappeared ; the patient is now as much guaranteed against the occurrence of secondary symptoms as if he had taken a bushel of mercury, with the additional advantage of not having injured his constitution. In cases of secondary or confirmed Syphilis, the remedy must be given until the mouth begins to feel somewhat sore, and the symptoms, whatever they may be, begin to disappear ; should the latter, instead of disappearing altogether, become stationary, the mercury may again be had recourse to without danger. It is never necessary to bring on profuse salivation ; this is a rule upon which we cannot too strongly insist, the more especially for the guidance of non-medical persons. To state *how long* the use of the remedy should be continued in all cases is quite impossible ; perhaps as a matter of precaution, it may be well to keep up a moderate action on the gums for a week after the removal of constitutional symptoms.

In some cases, notwithstanding all our care, mercury will excite distressing salivation, even when given in small doses. Should this occur, the patient must frequently wash the mouth with an astringent gargle, composed of two scruples of alum in six ounces of water ; but when the salivation is very severe, the tongue much swollen, and the inside of the mouth ulcerated, it will be necessary to touch the affected parts, once daily, with muriatic acid ; this should be done lightly, with a piece of lint on the end of a small stick, care being taken to avoid touching the teeth with the acid.

Having thus stated the manner in which mercury is to be employed for the cure of the Venereal disease, we have to explain certain precautions that must be observed during its use, and point out some circumstances which forbid its employment altogether.

As a general rule, it may be laid down that mercury should not be given to persons of a decidedly scrofulous constitution, or to those whose general health has been greatly injured by excesses, poverty, long residence in warm climates, and other

causes which undermine the constitution ; to people who are very irritable, and subject to inflammations on slight excitement, it must be administered with the utmost caution. If a sore exist on the genital organs, or any part of the body, this sore should be carefully examined every day, and its condition will afford an excellent guide as to whether the remedy agrees or not ; thus, should the sore look angry, red, and begin to slough, we must at once suspend the use of the mineral.

During a mercurial course the patient should avoid exposure to cold and wet, but it is unnecessary that he should confine himself to the house ; the diet should be mild and unstimulating ; the use of spirituous liquors must be abstained from, and the condition of the stomach and bowels must be carefully attended to.

Should fever or symptoms of local inflammation arise during a mercurial course, it will be proper to suspend the remedy, and combat these disorders by strict regimen and an anti-inflammatory treatment.

We have already said that mercury is a remedy unsuited for certain states of the constitution ; when, therefore, the general health of the patient will not admit of his undergoing a mercurial course, we must employ a remedy which is scarcely less efficacious in the treatment of secondary Syphilis. This remedy is the *hydriodate of potass* ; four grains may be added to a quart of the compound decoction of *sarsaparilla* and the whole taken at intervals during the day ; the hydriodate must be gradually increased until the patient takes fifteen or twenty grains in the above quantity of vehicle during the day. When it is not convenient to obtain the compound decoction of *sarsaparilla*, the simple decoction or a decoction of *guaicum* with a few grains of nitre will answer. In cases of foul, sloughing ulcers which occur in debilitated subjects, nutritious diet, with opiates at night and the *ioduret of iron*, will afford the best chance of cure. The ioduret of iron may be administered in the form of syrup or of pill ; the quantity to commence with is two grains, which may be gradually increased to ten daily.

TARTAR EMETIC.

Tartar Emetic or the Tartrate of Antimony. Of all the preparations of Antimony this is the most to be depended on, and when given in appropriate doses is capable of fulfilling every purpose with which antimonial remedies are employed. The action of this salt varies according to the dose, and the state of the system at the time of its administration. In doses of three or four grains it acts powerfully as an emetic, and the safest plan of exhibiting it with this intention, is by dissolving three or four grains in half a teacupful of water, and giving a tablespoonful of the solution every ten minutes till free vomiting takes place. But when it is found necessary to excite vomiting in very young children, ipecacuan, being a safer emetic and less harsh in its action, is generally preferred; and in cases of poisoning the sulphate of zinc (white vitriol) is a more suitable emetic, because it acts more quickly and with greater certainty.

Tartar Emetic is a very useful sudorific when taken in small doses frequently repeated; if a grain be dissolved in a pint of water, and two tablespoonsful of this solution administered every hour, it will seldom fail in bringing out a gentle and salutary perspiration; but when intended to produce this effect it is seldom given alone, but is commonly united with sweet spirits of nitre, spirit of Mindererus, camphor mixture, and sometimes with purified nitre and Epsom salts.

Tartar Emetic has long been employed in this country, in fevers and inflammatory diseases, and from its power of controlling the action of the heart, and mitigating the symptoms, is deservedly considered the most valuable of all the anti-inflammatory medicines, and ranks next to blood-letting in subduing febrile disorders. It may be taken alone, or in conjunction with nitre, or the tincture of henbane, as directed at pages 76 and 425; and when preceded by free bleeding, either arrests the progress of the inflammation, or controls and allows it to be conducted to a safe termination; and even in cases where the proper period for abstracting blood has been allowed to escape, this remedy will still afford the best chance of overcoming the disease. The first doses generally cause vomiting and severe sickness at stomach, but afterwards the remedy may be given

freely without producing any sensible evacuation, although the patient generally complains of nausea. Dr. Copland is mistaken in stating that the employment of large doses of Tartar Emetic in inflammations originated in Italy (Dictionary of Practical Medicine, part 6, page 412); the merit of first proposing this method of treatment belongs to Dr. Marryat, of Bristol, who, in his work on Therapeutics, published in 1790, not only recommends this remedy as a powerful febrifuge, but also states that it may be given to the extent of ten grains in eighteen hours, and in some cases "without the least sensible operation, either by sickness, stool, sweat, or urine;" but the credit of establishing this practice and bringing it into general use throughout Europe, belongs to two celebrated Italian physicians, Rasori and Tommasini.

In the Italian hospitals we have frequently seen twenty-five and even thirty grains of Tartar Emetic administered in the course of twenty-four hours, without producing either vomiting or purging, in cases of inflammation of the lungs, and other acute inflammatory diseases; but blood-letting had been altogether neglected, or only a small quantity of blood taken away by cupping or leeches. British practitioners on the contrary place their chief reliance on free blood-letting at the commencement of inflammations, and when Tartar Emetic is resorted to, it is with the intention of maintaining the effect produced by the lancet; by this method of treatment, which is by far the most successful, not more than half the quantity of the remedy is required, and in many cases five or six grains daily produce the desired effect.

Tartar Emetic is contraindicated in all cases where there is pain or tenderness at the pit of the stomach accompanied with much thirst, while the tongue at the same time is of a florid red colour. But when the tongue is furred, it often becomes clean after the operation of the medicine.

The Italian physicians prescribe this remedy to moderate the distressing hectic fever which always accompanies consumption; they give it in doses of two, three, or four grains, sometimes as high as six or eight, dissolved in a few ounces of water, sweetened with syrup of orange-peel, and coloured with red lavender. We have frequently seen patients in the Italian hos-

pitals anxiously asking for this mixture on the approach of the evening paroxysm. The soothing effect which results from it is soon experienced, and the burning heat of the hands and feet, and restlessness, are greatly relieved. In our own practice, we generally give it combined with a drachm of the tincture of henbane, or two drachms, according to circumstances.

Tartar Emetic, when applied externally in the form of ointment produces an eruption on the skin resembling that of cow pox, and is, on this account, frequently employed as a means of counter-irritation (see pages 26 and 85). A hot solution of Tartar Emetic, rubbed in by means of a piece of flannel, produces pustules of a smaller size, which heal up without leaving any marks on the skin. This last method of counter-irritation is, therefore, preferable for females.

TEETHING.

During the process of gestation the human embryo goes through a great variety of changes, by which it is gradually brought, from a most imperfect and rudimentary state, to the condition of the full-grown child at birth. Even then, however, the child is far from being perfect; many of its internal organs have to undergo still further changes, and several of them are mere rudiments, because they are not intended to be called into action until a subsequent period of life. Amongst the latter are the teeth. While the child is supported by nutriment from its mother's breast these organs would be not only useless but injurious; they are, therefore, concealed in the gums until the digestive organs are fitted for the reception of animal food. At this period they begin to make their appearance, and are fully formed by the time that the infant is, in some measure, prepared to enjoy an independent existence.

The term dentition, properly speaking, indicates the circumstances connected with the natural eruption of the teeth; in the present article, however, we shall consider dentition or Teething in its popular sense, that is to say, in connexion with the disorders which occasionally accompany the process of Teething. This process occurs at two distinct periods of life,—during in-

fancy, when it is termed the first dentition, and during childhood, when it constitutes the second dentition.

The period at which the first or milk teeth appear varies considerably in different children; every parent must have observed this fact; some children will cut their first teeth at the age of four months; others not before eight, nine, and twelve months of age, or even later. The following statement is given by Dr. Ashburner, who has paid much attention to the subject of dentition in children. "The teeth of the first dentition commonly cut in couples, a short interval of time occurring between the appearance of each tooth. The two anterior incisors (front teeth) of the lower jaw should appear first (about the seventh month); then the two anterior incisors of the upper jaw (eighth month); to these succeed the lateral incisors of the lower jaw (ninth month); then come those of the upper jaw (about ninth or tenth month); after these the two molar teeth (jaw teeth) nearest to the lateral incisors of the lower jaw appear, and then the first molars of the upper jaw (twelfth to fourteenth month); after these come the two lower canine (eye teeth, sixteenth to twentieth month); then the upper canine (same period); and finally, the two last molars of both jaws (twenty-third to thirtieth month)."

Thus the number of teeth cut during the first dentition amounts to twenty, and the period occupied in the process is about two years from the appearance of the first tooth.

The process of second dentition is composed of two parts, the falling out of the temporary or milk teeth, and the appearance of the permanent teeth. Before any of the milk teeth, however, are shed the first four permanent grinders come up, at about the age of six years, and the child has then twenty-four teeth; about the age of seven the lower middle incisors become loose, fall out, and are replaced by a couple of permanent incisors; from this period up to the age of twelve the other teeth fall out one after another, are replaced by permanent teeth and at the age of thirteen the four second permanent grinders; finally, between the ages of seventeen and twenty-one years, the wise teeth make their appearance, and complete the process of permanent dentition, the mouth now containing twenty-eight teeth.

Such is the natural order in which the Teeth are cut during the first and second dentitions ; variations from this order frequently occur, but to enumerate one tithe of them would extend our present article beyond all reasonable bounds.

DISORDERS OCCASIONED BY TEETHING. *First dentition.* Although the process of dentition be a natural one, still we cannot deny the fact that the period of "cutting the teeth," is often attended with much danger to the child, and that dentition may, either directly or indirectly, be the cause of numerous disorders during infancy.

The teeth are intimately connected by structure and position with the osseous system of the individual ; they receive their nerves from one of the most extensive and important nerves of the brain ; moreover, as organs of mastication, they bear a close relation to the alimentary canal ; hence, it is not extraordinary that, when the dental system is deranged, the alimentary canal and the nervous system should participate more or less in its disorders.

When the first teeth are about to pierce the gums a certain train of symptoms usually occurs ; these may be briefly noticed in order that they may not be mistaken for disordered actions ; the edges of the gum where the tooth is about to come through present a slight ridge or eminence ; the infant becomes a little uneasy at night, cries frequently and carries its fingers to the mouth ; the point of the gum just above the tooth now becomes red and sore ; it softens, then is covered with a white point, and at length the crown of the tooth makes its appearance.

While the symptoms which accompany dentition are of the local and mild character just described, the process may be regarded as natural ; for in the present artificial state of society few children, indeed, are exempt from them in some degree or another. In many cases, however, the symptoms accompanying the eruption of the milk teeth are much more severe ; the child is more or less feverish ; the digestive organs are deranged, and vomiting or diarrhoea supervene ; finally the local irritation in the mouth may extend to the nervous system, and excite either general convulsions or an almost endless variety of nervous disorders.

We shall examine each of these affections successively.

One of the most common effects of difficult Teething is sym-

pathetic fever; the febrile symptoms occur with various degrees of intensity, in some cases being very slight, in others extremely severe. Slight feverish action need excite little apprehension, but when the skin is very hot, when the child becomes exceedingly restless and refuses to take the breast, we must not neglect the sympathetic disturbance of the vascular system, lest dangerous consequences follow. As a general rule, it may be stated that, whenever any *serious* accidents accompany the eruption of the teeth, we should have recourse to the simple, but efficacious operation of *lancing* the gums; this may be done with a gum-lancet, or even a common pen-knife, the edge of the instrument being placed over the point where the tooth is about to come through, a cut may be made until the blade is felt to grate against the edge of the tooth: the operation may be repeated three, four, or even six times, on every alternate day, should circumstances require. To calm the general disturbance tepid baths will be found useful, and the bowels may be opened with *manna*, the *syrup of senna*, or a few grains of calomel. Non-medical persons should, on no account, trust themselves with the administration of *opium* by itself to infants of tender age.

The febrile disturbance now alluded to is often accompanied by *diarrhaea*, or looseness of the bowels; this may be considered as the most frequent accident of Teething. When the diarrhoea does not last beyond four or five days, it is attended with no danger; but in many cases, the looseness continues beyond this period, and is increased at the appearance of each new tooth; the child occasionally vomits up its food, the face assumes an unhealthy, dull, and leaden look, the flesh wastes away, and the little patient may be suddenly cut off by convulsions, or perish in a state of great exhaustion and debility.

Far from considering, then, the diarrhoea which accompanies Teething as an useful flux that should not be interfered with, we are of opinion that it should be restrained whenever the looseness continues beyond a few days, or seems to affect, even in a slight degree, the general health of the infant. Lancing the gums must be had recourse to here, as in the former case; the state of the skin which, in old cases of this kind, is generally dry and hard, must be improved by the use of the tepid bath twice a week. Should the looseness be attended with any signs of in-

flammation about the abdomen, then we must endeavour to remove this state, without reducing too much the strength of our little patient; warm fomentations may be applied to the belly; small doses of *ippecacuan* (two grains every three or four hours) may be given, unless vomiting accompany the diarrhœa, and one or two *leeches* may be placed on the abdomen. As an astringent, one of the best which can be employed is the *compound kino powder*, in doses of two grains, but it must be remembered that every twenty grains of this powder contains one grain of opium. For the other remedies which will occasionally be found useful, we must refer the reader to the article *diarrhœa*, page 219.

Vomiting generally arises from sympathetic irritation of the stomach; it can only be relieved by removing the irritation of the gums on which it depends; this may be done by the means already pointed out; and the same laxative medicines should be administered (unless diarrhœa exists), and the quantity of food given in the twenty-four hours must be diminished.

But the most dangerous affection to which children are subject during the period of Teething, is convulsions. The severity of the symptoms connected with the nervous system is extremely various; in some cases we have nothing but an undue degree of sleepiness; in others, the effects on the general condition of the nervous system are shown by restlessness, want of sleep, starting in the sleep, flushing of the face, partial paralysis, squinting, irregular movements of the muscles; in a word, by an almost endless variety of nervous disorders. Thus irregular motions similar to St. Vitus's dance, and the nervous disorder called "the crowing inspiration," are often connected without difficult Teething.

We have in another place (page 180) described the symptoms and treatment of convulsions, and particularly referred to that form which accompanies dentition. We shall therefore merely observe here, that although the process of Teething may be the exciting cause of the convulsions, it usually becomes so by first deranging the functions of the stomach and alimentary canal; hence, while we have recourse to the remedies pointed out under the head of convulsions, the utmost attention must be paid to the condition of the stomach and bowels.

TETANUS.

Tetanus is characterised by violent and painful contractions of the voluntary muscles of the whole, or of some part, of the body, accompanied with tension and permanent rigidity of the muscles affected; the mental faculties and power of sensation remaining unimpaired.

The approach of this painful and dangerous disease is seldom announced by any premonitory signs. In general the earliest symptom is a feeling of stiffness about the neck, and at the back of the head, which in most cases is first observed on awaking in the morning, or after sleeping during the day; this increases and extends to the jaws, while the throat becomes dry and slightly sore. These symptoms, however, so frequently occur from exposure to currents of air or other circumstances, and wear off without putting the patient to much inconvenience, that, at the commencement of this disorder, they are generally overlooked. But a train of symptoms soon follow which distinguish this from all other diseases: the muscles of the neck and jaws become rigid, painful, and are occasionally seized with spasms; the patient then finds considerable difficulty in opening his mouth; the power of swallowing is impaired; and before long a sudden spasm brings the teeth firmly in contact, so that the mouth cannot be opened by the most powerful efforts. If the spasms and rigidity do not extend to other muscles the disease is called *trismus*, or *locked-jaw*, which, though a less painful form than that in which the muscles of the body and limbs are affected, can scarcely be considered as less dangerous. The next circumstance which generally takes place is great difficulty of breathing, occurring in paroxysms, and accompanied with violent pain about the medriff or diaphragm; this is occasioned by the spasmodic action and rigidity having extended to the muscles of the chest; but although the violent and painful contractions about the chest, and consequent difficulty of breathing, are much more severe at one time than at another, they never entirely cease, and constitute the chief source of the patient's suffering throughout the progress of the disease. The muscles of the belly are drawn in towards the spine, and in some cases become as hard as a board. When the disease is at its height the muscles of the limbs are

also rendered stiff, and partake of the general spasm, which is sometimes so violent that the body is bent in the form of an arch, its whole weight bearing upon the crown of the head and the hips, or sometimes on the heels; in other instances, again, the body is bent so as to rest upon the forehead and toes; but this is a rare occurrence, and the lateral incurvation is still more rare. We had have several patients with chronic Tetanus under our charge, in whom the trunk and limbs were perfectly rigid. In such cases the individual is completely helpless, and lies on his back.

The extraordinary postures into which the body is thrown during the paroxysms of spasms, the strangely and frightfully distorted appearance of the features caused by the spasmody contraction of the muscles of the face, and sometimes the expression of laughter or grinning (*risus sardonicus*), which the countenance retains during the most intense pain, unite in rendering the patient a remarkable but truly painful object of observation. The eyes appear watery, and remain fixed, staring, and motionless, in their orbits; sometimes the tears are seen to trickle down the cheeks; and in the more severe cases the teeth are occasionally broken by the violent spasmody action of the muscles of the jaws. "In almost every case," says Dr. Elliotson, "you observe that the tongue is bitten." This is an accident which we have never had an opportunity of observing. In all the cases which have come under our notice the tongue has not been affected until the disease reached its height, and then during the paroxysms it was drawn inwards to the back of the throat, giving rise to a painful sensation of choking. In July, 1828, a negro in one of the West India islands, while walking with a cutlass resting on his shoulder, accidentally let it fall; it dropped on his naked heel, and completely divided the great tendon called the tendon of Achilles. On the following day a spasmody twitching commenced at the wound, and back part of the leg, which was soon succeeded by the most violent Tetanus. In this case the patient, who experienced great difficulty in articulating, mentioned to me in a whisper that when the fits came on (and they occurred about every ten minutes), he felt as if his tongue would be drawn down his throat and choke him. He was unable to swallow and, though a very strong man and in the prime of life, died in less than twenty-four hours completely exhausted.

Tetanus is most to be dreaded when the muscles of the neck and throat are chiefly affected ; any attempt to swallow liquids is then attended with convulsive efforts, and the patient, as in hydrophobia, dreads the sight or even the sound of water. In two instances, after endeavouring in vain to compel the patient to drink some laudanum with water, the dread of the agonising convulsions which followed every attempt at deglutition, became so great, that even the sight of the vessel containing the liquid brought on a paroxysm. Both these cases so closely resembled hydrophobia in many respects, that they might readily have been mistaken for that disease. In one of the patients, the Tetanus was occasioned by a wound inflicted on the ball of the great toe with a piece of glass; in the other it appeared to have arisen from a neglected whitlow.

The pulse at first is generally natural, sometimes full and strong ; but as the disease advances, it becomes weak, quick, and at last intermitting ; in most cases the skin is covered with perspiration, the bowels are always obstinately constipated, and sometimes the urine is expelled involuntarily. During all the sufferings to which the patient is subjected by this cruel and horrible disease he remains perfectly silent, and appears afraid to speak ; he continues sensible to the last, and is generally carried off by a violent convulsion.

The duration of Tetanus varies according to the severity of the case. When the violent train of symptoms above enumerated invade the patient rapidly, death is generally the consequence at an early period, occurring frequently in the course of twenty-four or forty-eight hours : but if he survive the third day, the chance of recovery is greatly increased ; and, in warm climates, if the disease be protracted to the seventh or eighth day, it usually terminates favourably. Sometimes the disease advances with frightful rapidity. The late Professor Robinson of Edinburgh, has noticed the case of a negro, who accidentally scratched his hand with a piece of broken china plate, and died of Tetanus in a quarter of an hour after the injury. We lost a female patient in the West Indies about three hours and a half after the invasion of the disease. In this case the tetanic symptoms appeared to have arisen from exposure to the damp air of the night, after the body had been overheated by dancing. The patient was put

at her own request in a warm bath, where she died in a violent convulsive fit in less than five minutes after she was immersed in the water.

CAUSES. The usual exciting causes of Tetanus are wounds or other external injuries, exposure to cold damp air, and perhaps certain disordered conditions of the alimentary canal; but the proximate cause or intimate nature of the disease is involved in the greatest obscurity. The general opinion is, that it arises from irritation or inflammation of that part of the spinal marrow from which the nerves of the voluntary muscles take their rise. But although inflammation of the spinal cord occasionally co-exists with Tetanus, yet that the disease often occurs independently of this cause has been repeatedly proved by dissection. We have carefully examined the spinal marrow and its coverings in several cases, without finding the slightest trace of inflammation or of any other morbid change.

Tetanus is far more common within the tropics than in temperate climates, and chiefly arises in all countries from wounds, bruises, &c., inflicted on the fingers and toes, and more frequently from injuries done to the testicles than from other causes. We have known the disease to occur and prove fatal in consequence of one of the testicles having been bruised by coming violently in contact with the pommel of the saddle, and have also known it to follow amputation of the testicle, and the patient recover; in some instances it has arisen from the operation for the removal of the water in dropsy of the testicle (hydrocele). A strong prejudice exists among Creoles against the healing of wounds by the first intention, that is to say, without the process of suppuration; they believe that when matter flows freely from a wound the patient runs less risk of being attacked by Tetanus. This opinion may be founded on correct observation, but certainly the method they adopt of promoting suppuration, by applying strong stimulating dressings, is decidedly injurious, and we have met with cases of Tetanus which we are inclined to think were occasioned by the irritation thus produced. In the West Indies the mortality from wounds accidentally received, and from surgical operations in consequence of the occurrence of Tetanus, was formerly very great, and appears to have been caused chiefly by an improper manner of dressing the parts. The edges of the wound were

squeezed together, and kept in apposition by sutures or stitches, and straps of strong adhesive plaster; over these were placed pledgets of lint covered with ointment, then dry lint, compress cloths, envelopes of cotton or flannel, &c., all bound over the part by means of a long bandage. In the course of two or three days these coverings became saturated with a bloody foetid matter, which, from the heat of the climate, was soon rendered so offensive as to be almost intolerable; on their removal, the raw and tender parts were washed with warm water, frequently mixed with spirit or tincture of myrrh, and then carefully wiped, and plasters, compresses, &c., applied as before. Sometimes pieces of lint smeared with greasy substances, or irritating ointments, were crammed into the wound; it was also customary to apply a thick envelope of tow, charpie, or some such substance, to absorb the matter as it oozed from the wound. The local irritation and general excitement caused by the daily repetition of this absurd method of dressing wounds produced Tetanus to an extent which was truly frightful. Dr. Lind, in his work "On Diseases incidental to Europeans in Hot Climates" (1768), states that "towards the end of the late war, at one of the most remarkable sieges in the West Indies, five persons in six, whose limbs were amputated, died of Tetanus." At present a very different method is generally adopted, all that is considered necessary to be done is to keep the edges of the wound in contact with isinglass plaster, which is prepared by spreading a solution of isinglass in spirit upon slips of oiled silk or the unglazed side of silk; this has the advantage of being transparent, and not irritating. As the matter flows from the wound it is wiped from the surrounding skin or from a piece of glazed cloth placed under the part to receive it; and no other covering is necessary in warm climates than a piece of gauze, for the purpose of keeping off the flies and other insects. This light and simple mode of dressing allows the parts to be kept cool and free from irritation, is much more agreeable to the patient, and seldom followed by Tetanus.

TREATMENT. Dissections of those who die of Tetanus have been carefully and diligently practised, but it must be admitted that nothing satisfactory has yet been discovered with regard to the nature or proximate cause of the complaint. Hence, the principles of treatment are necessarily deficient; and, indeed, it

is melancholy to reflect how little this disease is under the control of medicine, although almost every powerful remedy which the *materia medica* affords has been tried in the hope of relieving the patient. Blood-letting, the cold and warm bath, opium, and all the powerful narcotic medicines known, mercury, antispasmodics, such as musk, tobacco, &c., and a variety of different remedies and modes of practice, have been extensively tried; but no plan which human ingenuity has hitherto devised can be said to possess any specific power over the disease; a detailed exposition of these means would therefore be attended with little advantage, neither would they be likely to interest our readers.

Tetanus is fortunately not a disease of very frequent occurrence in this country; but in the West Indies, though not so often met with as formerly, it is still a common and very fatal disorder; although the practitioners in those colonies are, however often compelled to witness the inefficacy of the remedies directed against tetanic affections, they do not consider them beyond the reach of medical art, but still continue their efforts in the hope of ultimately discovering some new medicine or method of treatment, through which they may be subdued.

When a person is attacked with Tetanus, he has at least one consolation, which is denied to the sufferer from its kindred disease, hydrophobia, and which ought to inspire him with courage in the midst of his greatest distress—namely, that even when the disorder becomes fully developed, and recovery appears almost impossible, the event may nevertheless be favourable; and it is highly satisfactory to know that, in its milder and more protracted forms, recovery is by far the most frequent termination. In subacute cases the efforts of nature alone are often sufficient to effect a cure, and patients have recovered under every kind of treatment. In such cases the cure is generally attributed to the remedy last taken, or to that which has been most extensively employed in the course of the disease. To this we may in a great measure ascribe the very opposite plans recommended for the cure of Tetanus.

One of the most singular phenomena connected with Tetanus, is, the resistance which the body, when under the full influence of the disease, offers to the operation of every description of me-

dicines ; the most powerful remedies appear to be almost inert, even when given in doses which in a healthy state would cause certain death. Solid opium has been given in enormous quantities without producing any apparent good or bad effect ; and the tincture of opium (laudanum) has been followed by no better result. When it is deemed advisable to employ the latter remedy, it should not be given in the solid form, because it might remain in the stomach undissolved ; and, as considerable difficulty always exists in making the patient swallow liquids, it will be preferable, instead of giving the tincture, to employ some of the salts of opium externally. Two, three, or four grains, or even a larger quantity of the *acetate*, or *muriate of morphine*, may be applied in the manner directed under the head of Cholera (see page 152), and repeated at longer or shorter, intervals according to the effect produced. But, though many practitioners place more confidence in opium than in any other remedy, we have never seen the slightest good effect result from its use, although we have employed it in every form and in large doses. Dr. Wright, one of the most experienced and judicious writers on West India diseases, strongly recommended the *cold bath*, but the practice is now generally abandoned. In the few instances in which we have resorted to this remedy, no salutary effect was produced. It is always dreaded by the patient, and whether employed by plunging him into the bath, or by throwing pails of water over the body, appears to augment, rather than diminish the pain, and sometimes causes the most violent convulsions. Numerous writers bear testimony to the good effects which have followed the *warm bath* ; but the case of the woman, noticed in a previous part of this essay, is the only one in which we have seen this method of treatment employed, and then the result was sufficient to prevent us ever again witnessing a repetition of the practice. Mercury has been employed internally in large doses, and externally by inunction ; but the action of this remedy is most obstinately resisted, and we have never heard of an instance of the system being brought under its influence where the disease was acute. Although a powerful remedy in subduing many other diseases, it is here of no avail, and is, in fact, worse than useless. To notice other methods of treatment, would be only to record their failure ; we shall, therefore, proceed to point out

the means which we have found most efficacious in subduing the Tetanic affections of warm climates.

It rarely happens that any kind of treatment is resorted to at the onset of Tetanus, because, as we have already mentioned, its earliest indications are common to other disorders of comparatively little importance, and are therefore almost invariably overlooked. The first symptoms which alarm the patient are slight stiffness about the jaws, and some degree of difficulty in deglutition, more especially in the swallowing of fluids; these uneasy sensations are usually accompanied, or soon followed, by a painful feeling of constriction under the breast bone. More importance is to be attached to these symptoms, if the patient has previously pricked, bruised, or in any way injured, one of his thumbs or fingers, or if he has wounded one of his toes in cutting a corn; in a word, if he bear a wound, whether slight or severe, upon any part of his body or limbs, he may then be certain that the indications above mentioned announce the approach of series of more urgent symptoms, which may soon place his life in imminent peril; he ought therefore to lose no time in endeavouring by active measures to ward off the sufferings with which he is threatened.

From two to three grains of *tartar emetic*, according to the age and strength of the patient, together with a strong dose of Epsom salts, calomel and jalap, castor oil, or in fact any active purgative which can be obtained without delay, should be taken, in order to act promptly and freely on the stomach and bowels. Another dose should be taken at the expiration of an hour, if the first do not produce the desired effect. It will also be advisable to take blood from the arm, if the patient have recently arrived from Europe, or if he be of a robust habit of body. The bowels are to be kept well open for several days, and the tartar emetic mixture (see page 425) is to be given at intervals, not with the intention of producing vomiting, but in order to maintain its lowering action upon the system. By this simple treatment the disorder, in the great majority of cases, may be checked at the very threshold of its career, or rendered so mild that recovery takes place in the course of a few days. But if the stomach and bowels cannot be moved, and the disease continues to advance, or, as is generally the case, the treatment be not begun until the

jaws are closed, and the disorder is fully established, then all kinds of remedies fail to produce their usual effect upon the body ; and not only are the jaws firmly fixed, but the sphincter muscle of the anus is spasmodically contracted, and offers the greatest resistance to the introduction of medicine into the bowels.

In all cases of Tetanus, unless in some instances towards the termination of the disease, the mouth may be opened for a few seconds, by suddenly dashing a cupful or basinful of cold water upon the face ; as soon as this is done, a person stationed close to the patient should instantly introduce a piece of Indian-rubber, or a bit of wood, between the teeth ; this remains firmly fixed, and cannot be withdrawn until water be again employed in the same manner. By this measure the teeth are kept sufficiently apart to admit of medicines being introduced into the mouth ; but this unfortunately is not the only obstacle to be contended with in the administration of remedies ; it often happens that the patient, in attempting to swallow, is seized with a convulsive paroxysm, and the medicine is violently propelled from the mouth. The remedy which we recommend at this advanced stage of the disease is *tartar emetic*, three grains of which, dissolved in a wine glassful of water, are to be given every hour, or every two hours, according to the urgency of the case, until a decided impression is made upon the system. By steadily persevering in the use of this medicine, the heat of skin diminishes, the pulse which had been ranging from 110 to 120 is gradually reduced to about 90, the spasmodic action becomes by degrees less violent, and the paroxysms less frequent ; at last nausea and vomiting come on, and in general the bowels are freely acted upon. By this method of treatment we have succeeded in rescuing patients from almost certain death, but such is the resistance which the body offers to the operation of the remedy, that it is sometimes necessary to give two scruples of tartar emetic or upwards before any very marked effect is produced, and indeed we have given it to a greater extent than this without any evacuation or any apparent effect whatever being produced, the tetanic symptoms continuing with the greatest violence to the termination of the patient's existence. After the full operation of the tartar emetic, the patient appears languid and inclined to sleep, and if it has been found necessary to give

a large quantity, the prostration of the vital energies is sometimes so great, that it becomes requisite to administer hot brandy and water, strong beef-tea, &c., to support the patient's strength. Stimulants, however, are not often required, but in most instances the solution of tartar emetic in smaller doses has to be continued for several days before the disease can be entirely subdued. During that period strong mutton-broth, beef-tea, or any other kind of nourishing food which the patient may be able to swallow, should be freely allowed; and in general the appetite returns in spite of the occasional nausea produced by the tartar emetic. As soon as this remedy can be dispensed with, it will be proper to give *quinine* in two grain doses thrice a day, and generous diet, with wine or porter, until the patient recover his strength. In severe cases the patient is sometimes rendered incapable of swallowing even the smallest quantity of any kind of liquid; when this occurs, the tartar emetic, in the same or in larger doses, dissolved in about the same quantity of tepid water, should be injected into the bowels. This method of administering the remedy is usually attended with considerable difficulty, but it must not on that account be abandoned.

We do not mean to recommend tartar emetic as a remedy competent to effect a cure in all cases, because the disease often advances rapidly to a fatal termination uninfluenced by any kind of treatment; but we believe it will be found to exercise a greater influence over the disorder than any other medicine or mode of cure hitherto proposed. Two of our West India medical friends, to whom we recommended this method of practice several years ago, have had ample opportunities of putting it to the test, in tetanic affections of every degree of severity, and they inform us that, by means of large doses of the remedy, they have succeeded in saving many lives. These gentlemen, we believe, intend soon to submit to the notice of the profession, a statement of the results that have followed in their hands from the use of tartar emetic, which will prove beyond a doubt that this medicine exerts a greater control over Tetanus than opium, or any of the numerous remedies heretofore employed.

The instructions given in works on the practice of physic, to administer purgative medicines so as to procure copious daily evacuations, can be applicable only to the milder or chronic forms

of the disease, or at its commencement, for, in the more severe cases, until the symptoms are greatly subdued by the treatment above directed, or by some other means, the bowels continue so obstinately constipated that no purgative, however powerful, will act upon them, and in fatal cases they remain constipated to the last. The purgative most likely to be found available is *croton oil*, two, three, or four drops of which may be placed in the mouth or twice that quantity may be rubbed in upon the gums. If ordinary doses of purgative medicines act upon the bowels, and purging can be kept up, the disease may then be expected to terminate favourably. Dr. Mason Good condemns the use of strong purgatives; but if he had ever witnessed the worst forms of the disease, he could not have fallen into the error of directing the bowels to be opened by gentle laxatives.

It is of the greatest importance, in every case, that we should commence the treatment from the earliest appearance of the symptoms; hence, the above instructions may be found useful in our West India plantations at a distance from towns, where medical aid cannot be immediately obtained; on board of ship; or, in a word, under any circumstances where it becomes necessary to do something for the relief of the sufferer in the absence of professional men.

LOCKED JAW OF INFANTS. This affection is rarely met with in European countries, but is very common in warm climates, more especially in the West Indies, where it was formerly computed to have destroyed upwards of a third of the negro infants shortly after birth. But greater attention to cleanliness and ventilation, and the superior comforts and accommodation enjoyed of late years by the negro population of those colonies, have tended greatly to diminish the mortality, although many infants still perish from this fatal disorder.

It usually occurs within the first ten days after birth, and has been ascribed to various causes, such as irritation produced by tying the navel cord, or by subsequent neglect of cleanliness, exposure to currents of air, and irritation of the bowels. Dr. James Clarke supposed that it was brought on in negro children from exposure to the smoke of burning wood.

The infant, at the commencement of the disease, appears less lively than usual, and is observed to suck with some degree of

difficulty; the jaw soon becomes stiff and immovable, and the little patient, being then rendered incapable of sucking the breast, or of swallowing, gradually sinks, or dies in convulsions.

Dissection has thrown no light on the nature of this disease; no morbid appearances whatever were discovered in any of the bodies which we have examined.

We are not acquainted with any method of treatment on which the slightest confidence can be placed. Opiate frictions upon the jaws, throat, and chest; emollient clysters, and the application of turpentine to the navel, are the means generally employed: but they never appeared to us to produce any effect in controlling the disease. The following is the only instance of recovery which has come under our notice. The child of a negress from Bonny was attacked with locked-jaw five days after birth; as soon as the mother, who was greatly attached to her children, observed that the infant sucked with increasing difficulty, and that the jaw was becoming rigid, she commenced rubbing the neck and jaws with warm castor oil, and gradually extended the friction over the body and limbs. She continued this treatment without intermission until the disease was sufficiently subdued to allow the infant to swallow, and then gave a teaspoonful of oil internally. This woman informed us that she had saved the life of her eldest son, when three days old, by the same treatment; she also mentioned that at the part of Guinea where she was born, more children died from locked-jaw than from any other disease, and that as soon as the slightest appearance of the disorder was observed the mothers rubbed in the castor oil as she had done, until their infants recovered, or died in their arms.

TETTER.

There are two diseases of the skin commonly called Tetter; the one is dry and scaly (*Psoriasis*); the other is moist, and known under the name of running Tetter (*Impetigo*).

1. THE SCALY TETTER, OR DRY SCALL, is characterised by irregularly shaped scaly patches, chiefly confined to the hands and arms, although they often appear on all parts of the body. Fissures or cracks are very apt to form in these patches, and give

out a thin fluid, which is concreted into crusts or scabs, the surface under these is red, tender, and irritable. This disorder is always attended with heat and itching, which are more distressing at one time than at another; sometimes it is periodical, vanishing and reappearing at certain seasons of the year. The patient generally suffers most in spring and autumn, in consequence of the sudden alternations of temperature which take place during those seasons.

Persons with dark complexion and full habit of body, whose skin is usually harsh and dry, are most subject to this kind of Tetter; it is said to occur more frequently in women than in men, is often connected with gout and gravel, and is generally understood to be of an hereditary nature, and not contagious. Writers on diseases of the skin describe several varieties of dry Tetter, but there is no necessity for noticing them here, inasmuch as the same general plan of treatment is applicable to all the different modifications of the disease.

Many physicians are of opinion that scaly Tetter is a species of leprosy; whether this be the case or not, it must be admitted that these affections are closely allied, and often exhibit themselves in the same person. Both are scaly diseases, and the difference between them is thus pointed out by Dr. Bateman. "Psoriasis, or scaly Tetter, occurs under a considerable variety of forms, exhibiting, in common with leprosy, more or less roughness, or scaliness of the cuticle (scarfskin), with redness underneath. It differs however from leprosy in several respects. Sometimes the eruption is diffuse and continuous, and sometimes in separate patches of various sizes; but these are of an irregular figure, without the elevated border, the inflamed margin, and the oval or circular outline of the leprous patches; the surface under the skin is likewise much more tender and irritable in general than in leprosy; and the skin is often divided by rhagades, or deep fissures." Dry scall and leprosy were at one time very prevalent in England; the worst forms of the latter disease were common, even as late as the seventeenth century. This was no doubt owing to the habits and manner of living of our ancestors. The working people in those days, more particularly in towns, lived almost entirely on salt beef and pork, with a very sparing supply of vegetable food; and their habits were not of the most

cleanly nature, as we learn from Erasmus. The following is this author's description of the habits of the English about two centuries ago :—“The floors are commonly of clay strewed with rushes, which are occasionally renewed; but underneath lies, unmolested, an ancient collection of beer, grease, fragments of fish, spittle, the excrement of dogs and cats, and everything that is nasty.”

TREATMENT. In the early and inflammatory stages of this affection, the constitution is evidently disordered; hence, the first step in the treatment is to change the mode of living. The diet should be mild, and as little stimulating as possible, baked meats, pastry, highly seasoned dishes, pickles, wine, spirits, and all kinds of fermented liquors should be carefully avoided; in fact, nothing stimulating can be taken without aggravating the irritation of the skin, and increasing the patient's distress. Whether the disease be acute or chronic, more benefit will be derived from strict attention to regimen and diet than from any of the numerous remedies which have been recommended; and certainly without the most rigid observance of these essential points, no effort of medical art is likely to be of much avail. In the commencement, if there be much irritation, and the patient be of a robust habit of body, *blood-letting* will be found serviceable; and the bowels should be kept freely open by means of *saline purgatives*, and the occasional administration of three or four grains of *calomel* at bed-time. The tepid bath should be employed twice or thrice a week, or the parts may be washed with tepid water, milk and water, or decoction of poppy heads; this last has sometimes an excellent effect in soothing the irritation of the skin.

In chronic or very intractable cases, when the long-continued use of purgatives has failed to produce any very marked effect upon the disease, it will be advisable to have recourse to sulphur in combination with alkalies. Two or three teaspoonsful of the *milk of sulphur* (or *common sulphur*), with the same, or half the quantity of the *carbonate of soda*, or the *carbonate of potash* (Dr. Rayer, and many of the best French physicians prefer the latter), should be given daily, and continued for some months. Sulphur baths may also be employed with advantage; and sea bathing has often an excellent effect. An ointment composed of three drachms of *Æthiop's mineral (black)*

oxyde of mercury), mixed with two drachms of *lard*, is sometimes of service in obstinate chronic cases. The troublesome itching of the skin, which generally accompanies this disorder, may be greatly relieved by the external use of *prussic or hydrocyanic acid*, freely diluted with water. Dr. Thomson recommends the following lotion—

No. 296.

Spirit of Mindererus, two ounces,
Diluted hydrocyanic acid, one drachm,
Tincture of foxglove, three drachms,
Rose water, five ounces. Mix. To be applied to the parts affected night and morning, by means of a sponge.

When the disease has arisen or is kept up by deficient diet and clothing, want of cleanliness, and the other evils which accompany poverty, we need scarcely mention that no remedies are likely to be of much service until the patient is placed under more favourable circumstances.

HUMID, OR RUNNING TETTER makes its appearance in circumscribed, irregularly round or oval shaped patches of small pustules closely set together, which, after discharging their contents, continue to throw out a thin acrid matter. This dries, and forms into yellow or greenish coloured scabs, from under the edges of which the matter still continues to ooze, giving rise to itching, or a stinging or smarting sensation accompanied with heat. This disease may appear on any part of the body, and may continue for months or for several years, being kept up by repeated eruptions of pustules. It is not contagious.

This eruption often breaks out in children while cutting their teeth, in young people, and in females with fine delicate skin and rosy complexion. It generally appears in spring, and sometimes breaks out at that season, for several years in succession, it may be developed on the neck, on the trunk of the body, or on the limbs; but in children the scabs are generally first observed on the middle of the cheeks, or at the sides of the nose, and gradually extend to the corners of the mouth and round the chin. The crusts or scabs resemble dried honey in appearance; Dr. Rayer compares them to the exudation of gum on a cherry-tree, when they fall off the skin appears red and shining, and is sometimes deprived of the cuticle or scarf-skin. When the disease is

not prolonged by successive eruptions, the crusts generally dry up, and after remaining two or three weeks fall off, and the skin gradually resumes its natural appearance.

This affection is often very difficult to cure in old people, more especially when it appears on the lower extremities; but it is never attended with danger.

TREATMENT. In the commencement of this disorder frequent gentle doses of *Epsom salts*, or *sulphur and cream of tartar* are to be taken, and during all its stages the diet should be sparing and confined to farinaceous substances and milk, with a small quantity of animal food once a day. Wine, spirits, and every thing stimulating, should be entirely abandoned. It may be necessary after some time to resort to the *carbonate of soda* or of *potash*, with *sulphur* as prescribed for dry Tetter.

The best local treatment consists in dusting the parts with *tutty or calamine powder (oxyde of zinc)*, in order to absorb the acrid matter and thereby diminish the distressing sensation of itching. The constant application of tepid water, or *decoction of poppy heads with marsh mallow*, will also afford great relief.

Dr. Rayer, a very able and experienced French physician, and the author of the best work on the diseases of the skin which has appeared of late years, recommends half a drachm of *nitric acid*, dissolved in a pint of barley water, to be taken daily; if the remedy oppress the stomach, it must be discontinued for a few days, and the warm bath employed, occasionally. In long continued cases, which have resisted the remedies usually employed, this treatment seldom fails in effecting a cure in the course of a month or a month and a half.

If the eruption has been preceded or is accompanied by obstructed or painful menstruation, the *preparations of iron* will be found the most efficacious remedies (see menstruation), and this treatment will also be found serviceable when the disease occurs in scrofulous subjects; in this last case sulphur baths should be employed.

When the eruption breaks out in infants, particularly during teething, nothing more should be done than to keep the parts as clean as possible, and administer small doses of rhubarb and magnesia occasionally.

TIC DOULOUREUX, OR NEURALGIA.

Tic Douloureux is the term usually applied to a painful affection of certain nerves of the face. It may be seated in one of the temples, at the side of the nose, under the eye, or in the gums—sometimes the pain attacks one side of the head and face, and may extend to the eye or ear. But although this affection is for the most part confined to the face, it may nevertheless attack the extremities of the body, the female breast, the liver, the womb, or any other internal organ, and has in many instances been known to follow diseases of the skin ; for example, it frequently succeeds the disorder called shingles (see page 611). The pain comes on in paroxysms, is of a peculiar kind, and differs from that which accompanies inflammation. The patient describes it as being lancinating, stabbing, sudden, and excruciating. In severe cases the pain is increased by the slightest touch, shaking of the room, or even by blowing upon the part, or by the least bodily exertion, and, when constant, delirium is sometimes the consequence. In some instances convulsive twitchings of the face are observed, and the tears are seen to run down the cheeks. There is perhaps no disease to which the human frame is liable, accompanied with more intense suffering than that which results from the more severe forms of Tic Douloureux. The attacks at first are comparatively mild, do not occur frequently, nor continue long, but when the disease is confirmed, they last for days, weeks, or even months, and may recur after very irregular intervals without the slightest warning, or any apparent cause ; and it is worthy of remark, that although the long duration, or constant return of severe pain, may render the patient's existence a wretched burden, yet it appears to have very little effect in abridging the period of life.

Tic Douloureux, whether seated in the face or in any external or internal part or organ of the body, is distinguished from inflammatory disorders by the sudden manner in which it appears and disappears, the absence of swelling, redness, heat of the part, and, in a word, of all the symptoms which characterise inflammation, with the exception of pain. It ought, however, to be observed, that in persons of an irritable habit of body, the vio-

lence of the pain sometimes occasions a greater or less degree of febrile excitement.

CAUSES. We still remain in the dark as to the nature and causes of this disease. Sometimes it appears to arise from atmospheric cold and damp, exposure to currents of air during the night, and sudden vicissitudes of temperature; it has been attributed to malaria, and to local irritation in adjacent or distant parts; for example, Dr. Abercrombie mentions a case of Tic Douloureux of the face, which was cured by removing a piece of china, which had been lodged there during fourteen years; and several cases have occurred where the disease ceased after the extraction of a decayed tooth, which had given no pain. Sir Henry Halford notices the case of a lady, who, after suffering severely from Tic Doloureux, was completely cured by the extraction of a tooth, which, though apparently sound, had occasionally given slight uneasiness previous to an attack of the disease. The tooth was found to be diseased at its root; a disordered state of the stomach and bowels, a torpid condition of the liver, anxiety of mind, and intense study, are supposed to act occasionally as exciting causes. On examination after the death, it has in some instances been proved, that the disease was connected with tumours, or other disorders of the bones of the head and face; but in general, dissection does not bring to light any structural disorder or unhealthy appearance of the part.

TREATMENT. Of late years the remedy which has been principally relied upon in the treatment of Tic Douloureux, is the *prepared rust of iron* in doses of from a scruple to a drachm thrice a day; but it ought to be kept in recollection that this, or any other preparation of iron, will be more likely to do harm than good, if the patient be of a robust habit of body, and full blooded (plethoric); *Fowler's solution of arsenic*, or the arsenical solution of the pharmacopœia, in doses of six to twelve drops, with the same quantity of *laudanum*, taken in a little water three times a day, has been found efficacious in many cases. *Quinine* in large doses, five grains three times daily, is perhaps more beneficial than any other remedy, when the attacks come on at regular intervals.* But these remedies, to be of service, must

* Sir Benjamin Brodie, in his treatise on Local Nervous Affections, says—"According to my experience, there is no part of the body in which such pains may

be continued for a considerable length of time ; and during their administration it will be proper to employ counter-irritation, by means of blisters, by rubbing in croton-oil, or the tartar emetic ointment (as directed at page 26), over or near to the affected part. Many persons have been cured by taking a *blue pill* every night until the mouth became affected ; and since this remedy offers some chance of success, it should be resorted to in every case where other modes of treatment have failed. In all cases constipation should be guarded against, and the state of the digestive organs strictly attended to.

Cutting out portions of the affected nerves has been tried in many cases, but in general this operation is only followed by a temporary good effect.

It occasionally happens that Neuralgia, after appearing at longer or shorter intervals during many years, at last wears off spontaneously ; but, more frequently, it continues uninfluenced by any description of remedies, and harasses the patient until the termination of life.

When other remedies have been found of no avail, most persons seek relief from the use of opium, or the salts of morphine ; but though these, and other narcotic remedies, such as the extracts of belladonna, hemlock, henbane, &c., produce the effect of palliating the disease, they seldom succeed in removing it entirely. The pain is often greatly relieved for a time, by the application of a *belladonna plaster* over the part affected ; and the same effect is frequently produced by rubbing in the *ointment of veratria*, which is prepared by mixing from ten to forty grains of veratria with an ounce of lard.

not occur ; and when they occur daily, or on alternate days, they are always relieved by the exhibition of the sulphate of quinine, or of bark combined with arsenic ; but large doses of these medicines are sometimes required. A respectable medical practitioner consulted me, believing that he laboured under a disease of the spine. He complained of pain, which he referred to the inferior vertebrae of the back, and which was so severe, that he could scarcely endure it. On inquiring, I learned that the pain always attacked him at a particular period of the night ; that it lasted for a certain number of hours ; and then he was free from pain, or nearly so, in the intervals. I recommended that he should take the sulphate of quinine procured at Apothecaries' Hall. He took as much as fifteen or sixteen grains daily, without any decided amendment ; I advised him to increase the dose still further, at last he took half a drachm of the sulphate of quinine daily, and this effected his cure."

TOOTHACH.

When the minute nervous filaments which are exposed in the cavity of a carious or decayed tooth are irritated by cold air, cold fluids, or the application of any acrid substance, Toothach is very frequently the consequence. Sometimes the pain may be relieved immediately, by the application of a little *kreosote*, as directed at page 417; or by a little strong nitrous acid mixed with three or four times its weight of spirit of wine, introduced into the hollow part of the tooth, by means of a hair pencil or a little lint. But when the irritation extends to the periosteum, or fibrous membrane which envelopes the tooth and lines its socket, the pain becomes permanent and exceedingly distressing. The treatment in this case consists in the employment of warm fomentations of poppy-heads (page 486), blistering behind the ear, and drawing blood from the gums. When, by these means, the inflammation is subdued, and the pain in a great measure relieved, the tooth should be extracted; or, when the pain and inflammation have entirely subsided, the cavity should be filled with gold, zinc, tinfoil, or whatever substance an experienced dentist may deem the most appropriate. But this process must not be too long neglected, nor employed while the slightest degree of pain is felt in the tooth.

A tooth which is much decayed and often attended with pain, or gives rise to frequent headach, should certainly be extracted. This measure should also be adopted when a fungous growth begins to spring up in the hollow part of the decayed tooth. But when a tooth decays to a certain extent, and then remains stationary, without occasioning pain, it may be serviceable for many years, and ought not, therefore, to be rashly interfered with.

Rheumatism sometimes attacks a decayed tooth, and gives rise to pain in the gums, face, and jaws. When Toothach results from this cause, blisters should be applied behind the ears, Dover's powder in doses of twelve or fifteen grains taken at bed-time, and the patient should confine himself to low diet until the inflammatory action subsides.

Toothach is sometimes intermittent: for example, it may come on every night and wear off towards morning; and this

sometimes occurs in teeth apparently sound, or only slightly decayed. In all such cases the tooth should not be removed until a fair trial has been given to quinine, or the arsenical solution as recommended under the head of Ague.

The pain which arises from cutting the wise teeth (*dentes sapientiae*) may be relieved by scarifying the gums, taking cooling saline purgatives, and living abstemiously.

TURPENTINE.

Oil of Turpentine is distilled from common Turpentine, the juice of several species of the pine tribe, chiefly of the *pinus sylvestris* or Scotch fir. This oil is at present much employed for destroying worms. To expel the tape-worm it is given in the dose of an ounce and a half to two ounces; and is also used against other intestinal worms in children, in the dose of a tea-spoonful, or twice or thrice that quantity, according to the age.

An ounce of the oil of Turpentine mixed with the yolks of two eggs, and a pint of thin starch, constitutes an excellent clyster in cases of flatulent colic.

Turpentine is a very useful and safe counter-irritant in all internal inflammatory diseases, after an impression has been made upon the affected organ by blood-letting. A large piece of folded flannel wrung as dry as possible out of hot water, and then freely sprinkled with Turpentine, is to be applied with the least possible delay, over the part where the pain is most severely felt, and carefully covered with a dry cloth to prevent evaporation; this is to be kept on as long as the patient can bear it, and should be renewed as often as may be found necessary. This method of counter-irritation has an excellent effect in determining the blood to the skin, is easily managed, and affords almost immediate relief. The external use of Turpentine, in this manner when employed at the very onset, or in mild cases of inflammation, frequently checks it without the assistance of bleeding.

Turpentine entered into the composition of the stimulating liniment, employed as a counter-irritant by the late St. John Long of empirical notoriety.

TYPHUS-FEVER.

Various species of continued fever have been described by medical writers, such as nervous, spotted, putrid, malignant, and jail-fevers ; but of late years the observations of many scientific men, in this and other European countries, have shown that nearly all the continued fevers that have been classed as distinct febrile diseases, are merely varieties of the fever of which we now propose to give a brief description, and which is by far the most common kind of continued fever in this country. The inflammatory fever, formerly described by authors as a distinct species of disease, is now almost universally acknowledged to be incompatible with the absence of local inflammation ; and we have avoided describing fever under various heads, because, with the exception of typhus, scarlatina, measles, and other eruptive diseases, it does not appear clear to us that continued fever can exist independently of some local inflammation ; and the principal inflammatory affections which give rise to fever have been already noticed. It is also generally admitted, that the numerous forms under which typhus-fever appears, are owing chiefly to inflammatory affections of the brain, lungs, bowels, or other organs with which it frequently becomes complicated ; thus giving rise to many symptoms not manifested in the simple or regular course of the disease. Patient investigation has also convinced nearly all the medical men who have taken the trouble to inquire into the subject, that typhus-fever, in the great majority of cases, is distinguished from all other febrile diseases by a specific eruption on the skin, and moreover that, as a general rule, it only attacks the same individual once in the course of his life—thus obeying the law which governs small-pox, scarlatina, and other eruptive fevers.

Typhus-fever sometimes commences abruptly ; at other times it is preceded, during several days, by certain symptoms which are called precursive or premonitory. The patient feels low-spirited, debilitated, and fatigued ; he becomes dull, morose, and complains of a sensation of constriction and oppression at the chest, and of soreness or lassitude of the back and limbs. The countenance is unusually pale and sallow, the eyes lose

their natural brilliancy and appear languid, the breath is cold or fetid, and the appetite is lost. These symptoms vary in severity: they may be so slight that the patient does not confine himself to his room, and in some instances they escape particular attention. Observation has shown that, in general, the quicker and shorter this premonitory stage is, the more severe and rapid will be the subsequent fever.

First stage. The fever begins with a sensation of cold at the loins, followed by shiverings alternating with flushes of heat, considerable depression of strength and spirits, restlessness, and general uneasiness. At the expiration of a few hours, fever in its more literal sense is manifested: the pulse is full and quick or oppressed, the head feels heavy, giddiness and headache are experienced, the face is flushed, or sometimes continues pale; there is considerable disturbance of the intellectual faculties, and an expression of distress is seen in the countenance, which is highly characteristic of the disease. The patient complains of constant thirst, the tongue is covered with a thin whitish coloured fur, there is nausea, the bowels are often in a natural state, and the urine is scanty, high coloured, and hot. As the disease advances, the drowsiness increases, there is singing or buzzing in the ears, and the patient lies in a half-stupid state, and is unable to sit up in bed. When roused, he still answers questions coherently, although in a slow and unusual manner, and when he awakes or is spoken to abruptly his countenance expresses an air of astonishment. There is now oppression at the chest, the general prostration is much increased, and in many cases there is cough with expectoration. On the fourth or fifth day, often at a later period, an eruption of pink or reddish-colored measles-like spots, about the size of the head of a pin, breaks out on various parts of the body, but chiefly on the chest and abdomen; they are slightly rough to the touch, and disappear when pressed upon with the fingers, but soon re-appear when the pressure is removed. This rash usually continues from three to five days, but is occasionally so slight and indistinct, particularly in children, that it often escapes observation; and, in some instances, the fever runs through its different stages, without the skin exhibiting the slightest appearance of any

kind of eruption.* Bleeding from the nose sometimes occurs about this period, and produces the effect of considerably relieving the head for a time. All the symptoms are aggravated during the night, the slumbers are short, disturbed, and unrefreshing, and there may be slight wandering, or delirium. The duration of this stage is generally about a week.

Second stage. The surface of the body, which may have been previously moist, is now dry and greatly increased in temperature: if the hand be pressed upon it for a minute or two, a peculiarly hot pungent sensation is communicated, which continues for some time after the hand is removed. The pulse is variable; it may be moderately quick, full, or soft, and easily compressed—in fatal cases it continues very frequent, generally above 125. The tongue, which was at first moist, now begins to get brown, dry, and shrunken, and the parched state of the throat causes some difficulty in swallowing. The desire for cold and acid drinks is still urgent. Small purple-coloured spots, or numerous minute white vesicles, like millet seeds, are frequently seen upon the skin about the eighth or tenth day from the occurrence of the shivering; sometimes the fever spots, which are technically called *petechiae*, exist at the same time with the specific eruption already noticed—when this occurs they both present nearly the same appearance as far as regards colour, but they may nevertheless be easily distinguished from one another. The brain is now more under the influence of the disease, the patient lies on his back in a sort of stupor, and appears careless about everything, although he is still aware at times of what is going on around him. When roused, he says that he is very well; his ideas are so confused that his answers to questions are generally incoherent, and he soon relapses into the same state of insensibility to external objects. He talks deliriously, and dreams without sleeping; this kind of delirium is called *typhomania*.

* Dr. Peebles, of Torquay, was, we believe, the first British physician, who pointed out this rash as a characteristic symptom of typhus-fever, and showed that it was not a variety of the petechiae eruption which so frequently occurs in the course of typhus, and other febrile diseases, as scarlatina, measles, &c., when they assume a malignant character.

and is almost characteristic of the disease; in some instances the delirium is noisy, and the patient requires restraint. The abdomen is painful when pressed upon, and sometimes becomes distended and tense: there is also purging to a greater or less extent, and in many instances dysentery comes on; the urine is passed with difficulty, or may even accumulate in and distend the bladder; the hands tremble, twitchings or spasmodic movements of different parts are observed, and black adhesive mucus matter covers the lips, gums, and teeth.

Third stage. Towards the fourteenth day, sometimes two or three days earlier, if the disease is about to terminate favourably, a gradual amendment of all the symptoms is observed. A slight degree of moisture breaks out in the skin; sometimes bleeding from the nose takes place; the tongue, gums, and nostrils become moist, while the dark-coloured matter with which they are covered is detached and falls off, and the patient now expectorates easily and freely. In many cases free perspiration breaks out all over the body and limbs, and emits a peculiar odour, the urine flows abundantly, the delirium ceases, the senses recover their activity, the patient is again able to sleep, the appetite returns, the strength gradually increases, and convalescence commences about the twenty-first day. The memory often remains impaired, while the buzzing in the ears, which has been more or less troublesome throughout the disease, and the deafness, continue long after the fever has ceased.

When, on the contrary, the disease proceeds to a fatal termination, the symptoms become more alarming, and new morbid phenomena are developed; the skin is covered with a viscid fetid sweat, the urine and fœces are passed involuntarily, the expectoration is dark-coloured and fetid, gangrenous sores form on the parts which have been subjected to pressure, the delirium is low and muttering, and the patient picks at the bed-clothes, the dead rattle as it is commonly called is heard in the throat, and death takes place about the termination of the third week—frequently at an earlier period, rarely later.

This short description of typhus-fever is necessarily very incomplete, and can only give a general idea of the more prominent features of a disease, the symptoms, course, and termination of which depend on, and are even liable to be

modified by, a variety of circumstances. The age and constitution of the patient, the state of the body at the time of the attack, the virulence of the contagion, the local disorders with which the fever may be complicated, and the treatment employed are circumstances which may not only greatly modify the symptoms, but also exercise a marked influence over the duration and termination of the disease.

The congestion, or accumulation of blood in the principal internal organs, which always occurs to a greater or less extent in the course of this disease, frequently causes inflammation. The brain is more or less affected in every case, but inflammation only occasionally occurs, and then we are often unable to determine its existence. This complication is most frequently met with in young robust individuals, and is manifested for the most part during the first stage of the disease, sometimes within twenty-four hours from its commencement, by buzzing and other noises in the ears, severe pain in the head, throbbing at the temples, delirium (*typhomania*), convulsive movements, &c.; sometimes nausea, vomiting, purging, and pain in the bowels are the predominant symptoms: the danger is then not so great as in the preceding case. In other instances, pain in the chest, bloody expectoration, cough, and difficulty in breathing, indicate inflammation of the lungs, or inflammation of the liver may be announced by an acute pain of the right side, a jaundiced appearance of the skin, &c. These affections greatly increase the danger, and they are the more to be dreaded because the extreme drowsiness and oppression of the brain, often prevent the patient from directing the attention of the practitioner to the affected organ.

Typhus-fever frequently appears under a very mild form, which is in no way dangerous when not improperly treated. Gripping in the bowels, aching pains in the limbs, and headache, with disturbed sleep, constitute the chief sources of complaint. The headache is generally aggravated towards night, but is seldom accompanied with much intellectual disturbance: sometimes an air of astonishment is observed in the patient's countenance on awaking, and his ideas are slightly confused for a short time. This benign form of the disease does not

generally last longer than sixteen or seventeen days, provided the patient be placed under favourable circumstances.

On the other hand, in severe epidemics, the contagious principle is so virulent that the vital powers soon become overwhelmed. The patient lies as if he were in a state of apoplectic stupor: black spots soon appear in different parts of the body, dark-coloured unhealthy-looking blood issues from the nostrils, the prostration increases, and the patient dies before the seventh day from the commencement of the disease.

The mortality of typhus-fever has been frightful, and not exceeded by that of plague, cholera, or any other pestilential disease; in cases when the air has been rendered impure by many persons being crowded together, while other unfavourable circumstances have existed at the same time, as in camps, prisons, vessels, &c., and in wide-spreading epidemics, where poverty, famine, or a humid state of the atmosphere and other circumstances have united to favour the contagion. It has been recorded by a late celebrated French professor, Dr. Desgenettes, that at the end of the year 1813, while a humid state of the atmosphere prevailed, a malignant typhus-fever broke out at Torgau on the Elbe, and out of 25,000 soldiers composing the garrison of that town, 13,448 perished from the disease in the course of three months. It has been estimated that the epidemic typhus, which prevailed in Ireland during 1740-41, carried off 80,000 persons; and the terrible epidemic fever, which raged in that country in 1817-18-19, attacked about one-fourth, or a million and a half of the population, in the course of two years.

In London, Glasgow, Manchester, Liverpool, and other large towns, typhus-fever is never absent; and in the more densely peopled districts, and wherever poverty, filth, impure air, and vice most abound, there the severest ravages of this disease are felt. It proves fatal to a much greater extent in Glasgow, in proportion to the number of inhabitants, than in any other part of the united kingdom: the bills of mortality of that city, show that out of about 250,000 inhabitants, it carried off 841 persons in the year 1836, 2180 in 1837, and 816 in 1838; whereas, according to Mr. Farr's tables, the mean annual mortality from

the disease, in the same number of persons throughout England and Wales, is 323. Dr. Southwood Smith has shown, by the returns obtained from twenty metropolitan unions, that out of 77,000 persons who received parochial relief, 14,000 were attacked with the fever—one fifth part of the whole—and that 1300 died. It has been well established by statistical inquiries, that one out of from every ten to sixteen individuals affected with typhus-fever in large towns dies; and also that in the more crowded and filthy parts, scarlatina, small-pox, measles, and other diseases become severe and malignant to an extent rarely witnessed in the country or in well-ventilated situations. Mr. Farr has pointed out, in a letter published in the Registrar-general's report for the year 1839, that the deaths from typhus-fever amounted to 1564 in the country districts, which contain 3,500,750 inhabitants, and to 3456 in the town districts, which contain 3,553, 161 inhabitants. All the facts connected with this part of the subject, illustrate in a striking manner the influence exercised by deficient ventilation, want of cleanliness, poverty, and immorality in the propagation of the disease, and in rendering it more severe and malignant.

Much diversity of opinion still exists in the medical world respecting the cause of typhus-fever. Many British and continental physicians believe that it cannot in every instance arise from intercourse with an infected person and that it may be generated and developed by various external agents, such as filth, foul air, improper food, intoxicating liquors, &c., and afterwards become susceptible of communication from one individual to another. On the other hand some distinguished writers, particularly amongst the French physicians, deny that it can be propagated by contagion, and maintain that it invariably arises from inflammation of a particular portion of the intestinal canal.* But as it would serve no useful purpose, we

* It may be well to remark here, that contagion and infection are generally employed as synonymous terms, inasmuch as both apply to the matter, whether in a visible or invisible form, which is generated in a diseased living body, and which is capable of communicating the same disease to another. Infection, in the strict sense of the term, is applied to diseases which are transmit-

shall avoid entering into any discussion with regard to the conflicting views and contradictions with which this important question has been embarrassed. In this volume, which necessarily embraces so many different subjects, sufficient space cannot be allotted to noticing the mass of evidence advanced to prove the contagious nature of this disease; we shall therefore confine ourselves to selecting two or three facts from the ample assemblage existing on this subject, which will no doubt be considered sufficiently conclusive by the unprejudiced inquirer.

Dr. Cowan states, in his "Vital Statistics of Glasgow," that "All the gentlemen who have acted as clerks in the fever hospital for many years past have been attacked with fever, unless they had it previously to their election. During last year, twenty-seven of the nurses of the establishment were seized with fever, and five of them died: several of the students have been affected. One gentleman who acted as apothecary died in the house; and if I have escaped, it must be attributed either to being past the period of life at which fever usually takes place, or to my being secured by having had two dangerous attacks at an earlier period of my career, when acting as physician's clerk in the infirmary, during the epidemic of 1816-17-18." Drs. Barker and Cheyne, in their report of the fever which in 1817-18-19 proved so fatal among the badly-fed and dispirited people of Ireland, state that "in the House of Industry in Dublin, no clinical clerk or apothecary escaped an attack of the disease; and on the twentieth of January, 1819, it was reported to Government that five of the medical attendants of the House of Industry were at that time lying ill of the disease. In the city of Cork nine physicians in attendance either on dispensaries or fever hospitals were attacked: every medical attendant at the South Fever Asylum in that city suffered. At the hospitals of the House of Industry, 170 persons were employed in different offices of

ted from one person to another through the medium of the air, as scarlet-fever, hooping-cough, measles, &c.; contagious to those which are communicated only by contact, as the venereal disease, itch, scald-head, Egyptian ophthalmia, &c.

attendance on fever patients; and from this part of the establishment were recorded 198 cases of fever." Similar evidence is also given by Dr. Tweedie, in reference to the London Fever Hospital: he says, "I can state from the most authentic sources, that every physician who has been connected with it, with one exception (the late Dr. Bateman), has been attacked with fever during his attendance, and that three out of eight physicians have died. The resident medical officers, matrons, porters, laundresses, and domestic servants not connected with the wards, and every female who has ever performed the duties of a nurse, have one and all invariably been the subjects of fever; and to show that the disease may be engendered by fomites (infectious matter) in clothing, the laundresses, whose duty it is to wash the patients' clothes, are so invariably and frequently attacked with fever, that few women will undertake this loathsome and frequently disgusting duty."

It has been observed in many of the large hospitals throughout the united kingdom, that the physicians and house pupils concerned in attendance on fever patients, the porters, nurses, barbers, &c., engaged in washing, handling, and waiting on them, who have once been affected with typhus-fever, are rarely attacked a second time, however much they may be exposed to the contagious effluvia; and, in fact, that the re-appearance of the disease in the same individual is an occurrence as rarely observed, as that of the return of small pox, scarlatina, or any other eruptive fever. It is also admitted by the most experienced writers on the subject, that the susceptibility to typhus diminishes with the advance of life, while the mortality from the disease increases, as may be seen by the following table, drawn by Professor Alison of Edinburgh, from cases observed in his own practice.

| | Cases. | Deaths. | Proportions. |
|-----------------|--------|---------|----------------------|
| Under 15 years. | 83 | 2 | 1 in $41\frac{1}{2}$ |
| 15 to 30 | 149 | 11 | 1 in $13\frac{1}{2}$ |
| 30 to 50 | 93 | 17 | 1 in $5\frac{1}{2}$ |
| Above 50 | 17 | 7 | 1 in $2\frac{1}{2}$ |
| Total | 342 | 37 | 1 in $9\frac{1}{5}$ |

"Of these 342, there were 170 cases of simple or mild

typhus, in which only three deaths occurred ; 79 cases presenting prominent affections of the head, and in these, 21 were fatal ; 58 cases with affection of the pulmonary organs, in which 13 were fatal ; and 35 with abdominal affection, in which only one death occurred."

The circumstances which operate in the diffusion of typhus-fever are filth and impure air, deficient nourishment, and food of bad quality, intemperance, a cold and moist state of the atmosphere, and in a word, every thing of a depressing and debilitating nature.

All the excretions from a patient with typhus, are charged with contagious *effluvia*, which become highly concentrated when cleanliness is neglected, and the ventilation is defective. Hence among the poor of larger towns, who are congregated in dark, dirty, ill-ventilated hovels, the danger from the contagion is much greater than in the well-ventilated feverwards of an hospital, with their iron bedsteads, clean walls and floors, &c., where the patients are carefully sponged and cleaned, their excretions immediately removed, and their sheets and linen frequently changed. It is on this account that medical men and clergymen, who visit the sick poor at their own habitations, are more frequently attacked with typhus than those who attend fever patients in properly-regulated hospitals ; for it has been well ascertained that the secretions and excretions convey infection much more readily than simple contact with the patient's skin. When ventilation is neglected, and the air is confined and quiescent, the contagious effluvium from fever patients becomes concentrated, and settles upon the clothes of the attendants or visitors ; and thus the disease is carried from one house to another, and often widely disseminated. When personal cleanliness is neglected, the effluvium is also imbibed by the filth deposited upon the skin, and is afterwards taken into the system by absorption : this occurs the more readily when the weather is moist and cold, because this condition of the atmosphere favours the process of absorption, the power of which is greatest when the air is most loaded with moisture ; hence typhus is more prevalent when the weather is cold and wet, than in dry and more genial seasons ; and it has also been observed that the seasons during

which it has prevailed epidemically have been unusually cold, and attended with more than an average quantity of rain. On the other hand, when the weather is warm and dry, the exhalation from the skin is increased, and the perspiration is rapidly carried on, absorption is consequently diminished, because nothing is present to stimulate the absorbing function of the skin—nothing, in other words, on which the absorbents can act. Within the tropics, where the heat of the climate powerfully excites the action of the exhalent vessels, and free perspiration and evaporation are constantly kept up, typhus-fever is altogether unknown. The complete immunity from this disease enjoyed by the inhabitants of the torrid zone, is also no doubt owing to the powerful heat of the sun in those climates, dissipating or destroying the contagious effluvia, which appear to be volatile, like the emanations from putrid bodies.

But of all the agents which predispose the body to be acted upon by typhus contagion, there is none more common or possessed of greater influence than intemperance. The long-continued use of ardent spirits lowers the vital energies, weakens and emaciates the body, and prepares it for the reception of typhus contagion, or of any epidemic disorder which may happen to prevail; and thus keeps the system, as it were, constantly upon the brink of disease. Besides the injurious influence which the use of alcoholic liquors exercises directly upon the animal economy, a train of evils are indirectly induced: the family of the drunkard are deprived of sufficient food, firing, clothing, and other necessaries and conveniences of life; while filth, and all the concomitants of poverty, which so strongly tend to the diffusion of typhus-fever, are brought into play; and hence it is observed, that the disease chiefly carries on its ravages in the districts of large towns, where the greatest quantity of spirits are consumed.

The statistical data already collected in Great Britain, and Ireland, as well as in the United States of America, with regard to the influence of abstinence from intoxicating fluids on health and life, show, in a striking manner, the power exercised by temperance in the prevention of typhus-fever; but to notice the facts connected with this part of the subject, would lead us to extend the present article beyond its due limits. We shall,

therefore conclude with observing, that the philanthropic individuals who are engaged in extending temperance societies throughout the land, are doing more to diminish mortality, to ameliorate the physical condition and improve the morals of the people—in a word, are conferring a greater benefit on the community at large, than could be effected by legislative enactments, or by any of the many schemes hitherto proposed by our wisest political economists.

TREATMENT. In mild cases of typhus-fever, convalescence is established between the fourteenth and eighteenth days from the commencement of the disease; that is to say, the patient, although still in a feeble condition, begins to relish his food, and sleeps more soundly, while his tongue is tolerably clean and his pulse natural. In ordinary cases, as we have already mentioned in describing the disease, the patient cannot be considered convalescent, until about the twenty-first day; and, in the more severe cases, the disease may be protracted to the thirtieth or fortieth day, or even later. Now, in other forms of continued fevers, whether arising from cold, or from functional derangement of the digestive and biliary organs, although at first it may be difficult, or even impossible, to distinguish them from mild cases of typhus, yet their course is invariably much shorter. The patient is generally in a convalescent state on the sixth or eighth day, and the pulse at no period of the disease exceeds 100; in general, it varies from 80 to 95, and is moderate in strength, or full; whereas in typhus, it is often small, feeble, and unable to bear the slightest pressure with the finger; the average frequency is about 105, or upwards, and in fatal cases it ranges from 120 to 140 until death. Hence, if fever, unaccompanied by local inflammation, cease of its own accord, or be arrested in its progress by remedial means, we have reason to infer, whatever doubts may have previously existed as to its nature, that it has not been typhus, because the latter disease cannot be checked by any kind of treatment hitherto proposed. This last-mentioned fact ought ever to be kept in mind during the treatment of typhus, because it teaches us that our remedies are to be directed, not to cutting short, but, to controlling the fever, and relieving the local disorders which may occur during its course, until nature

succeed in expelling from the system the febrifac poison on which the disease depends. Beyond this medical art can be of no avail ; and if medicines be given with any other object, they will be more likely to do harm than good.

In mild cases of typhus, or in the simple forms of continued fever above alluded to, the only remedies required are mild laxatives, such as *Seidlitz powders*, or a little *castor-oil*. The French practitioners prefer opening the bowels by means of emollient cathartics. The daily use of purgatives interferes with the regular course of the disease, and might produce considerable irritation or even inflammation of the bowels. Sponging the whole body and limbs daily with tepid water is very refreshing to the patient, and is attended with no risk. The drink should consist of cold water, which has been boiled, toast-water, or lemonade; and a little light farinaceous food, such as arrow-root, or gruel, may be allowed, if the patient be inclined to eat ; but soup, or any other preparation of animal food, must be entirely prohibited.

In more severe cases, if the patient be young and robust, and if there be symptoms indicating a disposition to inflammatory action of some internal organ, it will be proper to draw blood from the arm, to the extent of from ten to sixteen ounces ; but in the great majority of cases, more especially if the patients be of weak constitution, or have been living intemperately, general bleeding is not only unnecessary, but might probably prove injurious, and should never be resorted to under any circumstances, unless at the commencement of the disease, that is to say, within the first three or four days. But in all cases *local bleeding* should be employed whenever any organ is threatened with inflammation.

If there be increased heat or severe pain of the head, an unusually red or injected appearance of the eyes, quick sharp pulse, or other signs indicating undue determination of blood to the head ; and, more particularly, if at the same time the patient be delirious, noisy, and attempts to get out of bed, local blood-letting becomes indispensable. Twelve or fifteen *leeches* should be applied to the temples, behind the ears, or to the nape of the neck, and the bleeding afterwards encouraged by warm fomentations. The hair should be removed, and pieces

of linen rag, dipped in vinegar and water, or spirits and water, are to be applied to the scalp, and frequently repeated, so as to keep the head cool. The light should be excluded, the room kept quiet, and every source of irritation carefully guarded against.

If the abdomen become distended, painful, or tender when pressed upon with the hand, or if there be purging and other symptoms of irritation of the bowels, the same or a greater number of leeches are to be applied, over the part where the pain is most severely felt, and afterwards a large warm poultice is to be placed over the abdomen to encourage the bleeding. In some cases one or two of the leech-bites continue to bleed longer than is requisite; when this occurs, the parts should be sprinkled with a little powdered alum, or touched with lunar caustic—moistening the leech-bites with tincture of steel will also stop the bleeding. No description of purgative medicine shonld be given; but a teacupful of linseed-tea, or barley-water, is to be administered as a clyster, and this may be repeated twice or thrice in the course of the day, until the irritation of the bowels is relieved. To stop the purging by means of chalk mixture and laudanum, or astringents, is a practice which experience has shown to be dangerous; but, in some instances, in the advanced stages of the fever, when the pulse is feeble and very frequent, and the patient's strength much exhausted, it may be necessary to employ remedies of this description to moderate the discharge from the bowels, but they must be administered with great caution.

If in the early stages of the disease, the patient be harassed with a constant desire for cold drinks, and experiences pain, tenderness, or heat, at the pit of the stomach, accompanied with much nausea and vomiting, no time should be lost in applying fifteen or twenty leeches over the seat of the pain, and afterwards the warm turpentine embrocation directed at page 87 should be employed, or a large blister applied. If there be cough, difficulty of breathing, a more or less vivid appearance of the countenance, or pain and other symptoms of congestion or inflammation of the lungs, or of the lining membrane of the chest (pleura), the local abstraction of blood is indicated, if the disorder be detected sufficiently early. In such cases the stethoscope is of great value to the practitioner, because the

patient is often unable to give the necessary information with regard to his ailments; and without the aid of this instrument pulmonary disorders might advance to a dangerous extent before they were detected, and the period allowed to escape at which our remedial means could be employed with most avail. Hence every conscientious practitioner applies the stethoscope, or his ear to the chest each time he visits a patient labouring under typhus-fever.

Under the circumstances above noticed, and in every case where local bleeding is deemed necessary, the leeching should be repeated as often as the urgency of the symptoms shall authorize, and the strength of the patient admit of depletion.

If symptoms of irritation, or of inflammation of an internal organ, come on towards the termination of the third week, or at any advanced period of the disease, the difficulties attendant upon the treatment will be greatly increased. The patient is perhaps affected with low muttering delirium, he may be lying on his back in a helpless condition, his strength greatly exhausted, and occasionally uttering faint cries of distress, while his features are shrunk, his eyes sunk in their orbits, his tongue covered with a brown or black crust, dry, and chapped; and his pulse, rapid, sharp, and wiry. Under these alarming circumstances, although the debility might induce us to administer wine or other stimulants, yet remedies of this description cannot be employed without aggravating all the symptoms; we must therefore endeavour to relieve the brain by applying a few *leeches* to the temples, a large *blister* to the nape of the neck, *cold lotions* to the head, and *mustard cataplasms* to the feet. If the bowels be affected, and the patient frequently voids liquid, fetid, ochre-looking stools, the emollient injection as already directed should be administered, and a large blister applied over the abdomen.

During the first stage of the disease, care should be taken to empty the bowels; but this should be done with *castor-oil Seidlitz powders*, or some other mild remedy; and after the eighth day medicines of this description should be discontinued altogether, or only given in very small quantities every other day: an emollient injection, however, may be administered daily. In the second and third stages of the disease, there is

some degree of intestinal irritation in every case, and this would more probably be augmented, rather than alleviated, by the use of purgatives; whereas the administration of emollient clysters, and the occasional use of very gentle doses of the finest *castor-oil*, or *rhubarb* and *magnesia*, cannot irritate the bowels, and will be found quite sufficient for the removal of morbid excretions. If these were allowed to remain, they would no doubt prove an additional source of irritation, and might tend to contaminate the whole frame; but the irritation which they produce in the intestinal canal, almost invariably, causes their expulsion from the body. Hence, the indication is to soothe the bowels by means of emollient injections, rather than increase the irritation already existing by the unnecessary administration of purgatives. It ought never to be forgotten that there is a greater tendency to inflammation, and consequent ulceration, of certain portions of the small intestines, than to organic disease of any other part of the body; hence we cannot too strongly deprecate the practice, so commonly adopted in this country, of keeping up a constant discharge from the bowels by means of saline purgatives, because, it must necessarily have the effect of increasing the irritation, and debilitating the patient.

Sponging the body with cold or tepid water is very beneficial, in all cases; it diminishes the distressing heat and dryness of the skin, is soothing and grateful to the patient, and is sometimes followed by gentle perspiration and more tranquil sleep. When the skin is hot and dry, cold water may be employed with perfect safety, and without any risk of interrupting the regular course of the rash, which usually appears on the skin; but tepid water is to be preferred if there be any degree of moisture on the skin, and at very advanced periods of the disease.

The French physicians are opposed to the use of wine, brandy, ammonia, or other stimulants, in any form, or in any stage of typhus-fever; but in this country, cases frequently occur, particularly when the patients have been accustomed to the use of alcoholic liquors, in which, during the last stage of the disease, the supine position and prostration of strength; the quick, soft, and compressible pulse; the cool or damp skin; and

cool state of the scalp, the pale and collapsed countenance, the extreme restlessness or low delirium, the starting or convulsive movements of the limbs, and other symptoms of direct debility, indicate the necessity of administering stimulants, in order to rouse the energies of the system, and thus prevent the patient from sinking; or rather assist, to use the emphatic language of the late Professor Gregory of Edinburgh, "in obviating the tendency to death." The best stimulant in such cases is Sherry or Madeira wine, of which a small glassful (about an ounce), diluted with a little water, should be given every two, three, or four hours, or at longer or shorter intervals, according to the effect produced. Dr. Bateman limited the quantity to a pint in the course of twenty-four hours. Whether wine or any other stimulant be employed, it should be gradually withdrawn as soon as the desired effects are produced.

The treatment, then, consists in drawing blood from the arm at the onset of the disease, if the patient be full-blooded or of a robust habit of body—in local bleeding, by means of leeches or cupping, whenever and wherever congestion, irritation, or inflammation renders it necessary, care being taken not to exhaust the strength of the patient by excessive depletion—in the daily administration of emollient clysters, and the occasional use of the mildest laxatives—in sponging the body with cold or tepid water—in the free use of cold beverages—and in restricting the diet to small quantities of the mildest farinaceous food.

If pressure cause rawness or excoriation of the hips, haunches, or back, the part may be washed with a solution of ten to fifteen grains of *nitrate of silver* (*lunar caustic*), in an ounce of water, or with a weak solution of the *superacetate of lead* (*sugar of lead*), in spirits of turpentine; and if sloughing or gangrenous ulcers form, *carrot poultices*, and the means recommended under the head of *mortification*, are to be employed. But we should endeavour to avoid these untoward occurrences by supporting the patient with pillows, so as to take off the pressure from the parts most likely to suffer; and in all tedious cases, when a tendency to excoriation is observed, the parts should be defended by soap-plaster. Dr. Arnott's water bed or air pillows, constitute the best means of guarding against the

effects of pressure; but these are not likely to be within the reach of persons who are so situated as to be unable to obtain proper medical attendance.

It sometimes happens, in the course of typhus-fever, that the bladder becomes distended and incapable of discharging its contents: the state of this organ should therefore be carefully attended to; and if fulness or swelling be observed at the lower part of the belly, the urine must be drawn off with the catheter.

Ventilation of the sick chamber is always of primary importance, and is more particularly demanded in all contagious febrile diseases: but great care must nevertheless be taken to screen the patient from currents of air, and to regulate the temperature according to the stage of the disease and the state of the patient. As long as the surface of the body continues hot and dry the room should be kept cool, and the bed-clothes light; but towards the termination of the fever, or when the temperature of the body is considerably reduced, additional covering must be employed. The bed-pan should be used, on the necessary occasions, and the patient disturbed as little as possible; and in the event of the evacuations being passed involuntarily, the bed should be protected by placing a piece of oiled silk, or glazed cloth, under the patient. The gums should be carefully washed, the linen and bedclothes frequently changed; and the necessity for the utmost attention to cleanliness in the patient's person, and to every thing around him, must be obvious to every one.

During *convalescence* the patient should wear flannel next the skin, and avoid sudden alternations of atmospheric temperature; he must carefully abstain from premature mental or bodily exertion, and the return to his ordinary occupations ought to be gradual and cautious.

DIET AND REGIMEN. During the first or inflammatory stage of the disease, no kind of nourishment should be allowed beyond newly-prepared whey or barley-water; but when the excitement subsides, small quantites of very light food should be given, such as thin arrow-root, gruel, tapioca, and vegetable jellies. When wine is considered necessary, it will also be advisable to keep up the patient's strength, with beef-tea, chicken or mutton broth, &c.

It may be inferred, from what has been stated in a previous part of this article, that the best means of diminishing the power of contagion, in this and other eruptive fevers, are cleanliness and proper ventilation. The attendants should avoid standing in a current of air which has passed over the patient; or, in other words, should stand between the patient and the channel through which the air enters the apartment; they should also avoid inhaling his breath, or leaning over him. It will likewise be advisable to purify the room from time to time, by placing flat dishes, containing the *chloride of lime* mixed with water, on different parts of the floor.

The late Dr. Henry, of Manchester, discovered that clothes, impregnated with the contagious effluvia from the bodies of patients with typhus, scarlatina, &c., are disinfected by exposing them to a temperature of 204° F., for an hour and three-quarters, and may afterwards be worn with perfect safety by healthy persons.

ULCERS.

Ulcers, whether proceeding from local or constitutional causes, are classed by surgeons under different heads, according to their appearances and the symptoms with which they are accompanied. The species of ulcers usually described are—the Healthy, the Indolent, the Irritable, and the Sloughing, or Phagadenic.

The SIMPLE, OR HEALTHY ULCER, is covered with small fleshy projections, which are of a red colour, firm, and pointed: these granular eminences are closely connected, forming an equal surface, and are bedewed with cream-coloured matter (*pus*). This form of ulcer is not painful, but is attended with a peculiar sensation of itching; its edges are smooth, soft, and though slightly florid, do not present the fiery-looking appearance of an inflamed part. Now, when an ulcer, whether proceeding from a wound, a burn, an abscess, or, in a word, from any other cause, either local or constitutional, exhibits these appearances, we know that the process which nature sets up for the restoration of the part is going on favourably, and needs no assistance from art. In fact, no means possessed of the direct power of promoting a cure are known; hence, all

that remains for us to do is to preserve the natural process from interruption, by defending the part from injury.

In ordinary cases, it will be sufficient to dress the sore with dry lint, charpie, or old linen, once in twenty-four hours, when it should be carefully washed with milk-warm water. If part of the dressing adhere to the edges of the ulcer, it should be carefully removed, so as not to produce irritation, or injure the numerous red points already noticed, called *granulations*. The necessity of protecting these little bodies from mechanical injury is obvious, because they secrete the matter which flows from the ulcerated surface, and without which the healing process could not be carried on; while at the same time they gradually fill up the cavity of the sore, until its surface reach the level of the surrounding skin—thus constituting the means adopted by nature for the completion of the cure. Many surgeons smear the lint, or whatever covering is employed, with a little *Turner's cerate*, *sugar of lead ointment*, or some other mild unctuous substance; this, however, is not done with the intention of expediting the cure, but merely to prevent the lint from adhering, and the edges of the ulcer from being injured on its removal. The dressing must be kept on by a roller wound round the limb, from its extremity to some distance above the sore: this is not to be applied so tightly as to produce pain, but with sufficient firmness to retain its own place and that of the lint, or whatever dressing may be employed.

When a wound cannot be healed by the adhesive process, or by what surgeons call the first intention, and when it is found necessary to open an abscess, we should apply warm poultices to the part, in order to promote the growth of granulations, until these have sprung up to a level with the surrounding skin: the poultices are then to be discontinued, and lint applied as above directed.

Sometimes the granulations become too luxuriant, and spring up higher than the edges of the sore, forming what is called *proud-flesh*, which may cover the whole or only part of the ulcer. When this occurs, we must touch the fungous part daily with *blue vitriol* (*sulphate of copper*) or *lunar caustic*, until it be brought down to the proper level; or we may apply

pressure, by means of strips of adhesive plaster and suitable bandages. In some instances, the ordinary means of keeping down proud-flesh do not succeed; we then have recourse to the application of a piece of sheet lead over the sore. When this measure is deemed necessary, a pledget of lint, covered with simple ointment, should be interposed between the lead and the ulcer, and a long roller or laced stocking, applied so as to embrace the whole limb, and thus keep the lead from shifting its position. If by these means the dressing be kept immovable, gentle exercise may be taken on foot, even if the ulcer be situated on one of the lower extremities; but the patient must bear in mind that if the dressing be not properly sustained by the bandage or stocking, and the granulations be ruffled, the ulcer will be prevented from healing.

The treatment, then, of ulcers, in which no unhealthy action is manifested, consists in a great attention to cleanliness, with regard to the surrounding parts—in exciting the granulating process, by the gently-stimulating action of warm poultices—and in preventing the granulations, when they have filled up the cavity, from being disturbed by external irritation.

The INDOLENT ULCER is characterized by a smooth surface without granulations, of various colours: sometimes it is glossy, or semi-transparent, or covered with a layer of viscid mucus; its edges are hard, white, and sometimes turned outwards, while the surrounding skin presents a varnished appearance, looks polished, like a pebble, or exhibits a rough and scaly aspect. The limb on which this description of ulcer is seated, is always more or less swollen, and the matter discharged is a thin serous-looking fluid, or is tenacious and fetid.

The indolent form of ulcer occurs most frequently in people beyond the middle age: it appears in many cases to be brought on by over-exercise, by keeping the limb in a dependent position, or by causes which act upon the part through the medium of the constitution—as intemperance in eating and drinking.

Some people submit to all the inconvenience and discomfort of an indolent ulcer for years, being afraid to dry it up through a dread of injuring the system, and inducing some inveterate or acute disease, by suppressing a long-continued discharge.

These ulcers, however, may be healed with perfect propriety, provided proper treatment be adopted, and the patient adheres to a sufficiently rigorous diet, until the system accommodates itself to the change, and the state of the general habit is corrected.

The mode of treatment now generally preferred is that by pressure with adhesive straps, which is not only very efficacious, but possesses the advantage of being simple and easily managed. It is performed in the following manner:—The limb having been shaved, a slip of adhesive plaster, about an inch and a half in breadth, is to be applied completely round the limb, about two inches below the ulcer, and in order to fix the strap firmly, one end of it should be made to overlap the other; then a second strap is to be applied a little higher, so as to cover two-thirds of the first; then a third in the same manner, proceeding upwards until the ulcer is entirely covered, and an inch or two of the skin above it. Having completed this part of the process, a long cotton roller, three inches broad, is then to be wound round the limb, from the toes to the joint immediately above the sore, or a laced stocking may be employed in place of the roller. The ulcer should be dressed once in thirty-five or forty-eight hours; and if the patient complain of severe itching and heat at the part, the bandage must be freely moistened with cold water. The straps and roller should not at first be applied very tight, or in such a manner as to produce pain; but after they have been used several times, the patient will, without inconvenience, bear to have the pressure considerably increased. This method of treatment soon produces the effect of subduing the swelling of the limb, and reducing the callous edges of the ulcer—granulations begin to spring up, and discharge cream-coloured matter—the part assumes a healthy action, and presents the appearance of the simple ulcer above described, and the cure is soon completed.

Although the most obstinate cases of indolent ulcer are often remedied by the above plan of treatment, yet it is not to be expected that this or any other method shall be invariably successful; we are therefore occasionally under the necessity of having recourse to other remedies. Various stimulants are employed to exite the growth of granulations, and induce a

healthy action of the part. *Mild citrine* ointment, spread on lint or on soft linen rag, or salve composed of an ounce of *basilicon* mixed with a drachm of the *red precipitate of mercury*, are useful dressings; but they must be used stronger or weaker, according to the effect produced. If the patient complain of smarting or pain, the strength of the ointment should be diminished by the addition of a little lard. Lotions are employed for the same purpose; those in common use are the *black wash*, composed of one scruple of *calomel*, with four ounces of *lime water*—*lunar caustic*, in the proportion of two grains to one ounce of water—and one or two grains of *blue vitriol* to three ounces of water. Some surgeons prefer *nitrous acid*, or *aqua fortis*, diluted with water, until it resemble weak vinegar. The best plan, however, is not to persist in the use of any particular ointment or lotion, but to vary the dressing as soon as we observe that the ulcer begins to fall back into the same indolent state, or remains stationary. Whatever application is employed, the use of the roller should never be neglected, because there is no fact in surgery better ascertained than the efficacy of pressure in cases of indolent ulcer.

IRRITABLE ULCERS vary considerably in appearance in different cases. In general, the surface of the sore, at the commencement, presents a very unequal aspect; the granulations at some parts are seen shooting up too high, in others they are scarcely perceptible: there is much pain and tenderness of the part, and redness of the adjacent skin; the discharge consists of bloody matter, which Sir Astley Cooper compares to strawberry-cream in appearance. If the irritation be allowed to continue, the granulating action is gradually destroyed; the surface of the sore acquires a smooth buff-coloured appearance, the matter discharged is thin, and the part becomes exceedingly tender, and is very painful when touched. Sometimes this species of sore is level with the surface of the limb; at other times it is deep like a cup, with thin sharp edges, and continues to spread as long as the excess of action exists. Weak irritable individuals, more especially those whose constitutions have been injured by intemperance, are most liable to this kind of ulcer; it also occurs in full-fed plethoric persons.

In the treatment of irritable ulcers, we must avoid everything which can keep up the excitement, and employ remedies of a soothing tendency. Of these, the best, if the excitement be merely local, are *fomentations of the decoction of poppy-heads*, and warm bread and milk poultices. The following ointment is strongly recommended by Sir A. Cooper:—

No. 297.

Spermaceti ointment, and
Citrine ointment, of each half an ounce,
Opium in powder, a drachm. Mix.

To be spread on lint, and applied to the part twice a day.

When an ulcer is of an indolent character, moderate exercise on foot may be allowed, and is even serviceable in many cases; here, on the contrary, motion would certainly have the effect of increasing the irritation, and absolute rest must therefore be strictly enforced.

If the over-action have run so high as to destroy the granulating process, soothing remedies, and those which have a tendency to make the sore granulate, are to be employed. Those generally preferred by surgeons, are *carrot poultices* and warm fomentations, occasionally—the solution of *lunar-caustic* above-mentioned, the *black-wash*—and *iodine*: this last is to be applied over the face of the ulcer with a camel-hair pencil, once or twice in the course of the day. But no remedies are to be used which produce pain—soothing applications are always preferable; and in cases where the patient experiences much pain, *opium*, to the extent of two or three grains, in twenty-four hours, should be given to allay inordinate irritability. Sometimes the *extract of hemlock*, or of *henbane*, answers the purpose better than opium or morphine: and in many cases it is necessary to vary these remedies, according to the state of the system and the action of the medicine. The state of the bowels ought to be carefully attended to, and kept open by whatever laxative agrees best with the patient. The diet should be light: salted and high-seasoned food must be altogether prohibited; and in most instances all strong and fermented liquors should be abstained from.

The SLOUGHING, OR PHAGEDENIC ULCER. The irritable

ulcer without granulations is very liable to become affected with inflammation of a low character, which soon terminates in sloughing or mortification: a granulating sore may also be attacked in the same manner, but this is a less frequent occurrence. The inflammation is for the most part first observed on the edge of the sore, which acquires a pinkish or fiery red colour; this soon changes to purple, and then becomes black; the vitality of the part is lost, and sloughs are thrown off, leaving a suppurating surface exposed. When the surface of the ulcer is affected, it loses its buff colour and assumes a livid red appearance. The sloughing may penetrate deep, or extend its ravages laterally to a considerable extent: in the former case the blood-vessels are sometimes corroded, and more or less profuse bleeding (*hæmorrhage*) is the consequence.

The sloughing ulcer generally arises from constitutional causes, such as great irritability of the system brought on by drinking spirits, by the abuse of mercury, or by the deleterious influence of an unwholesome atmosphere: the action of this last is sometimes observed in crowded hospitals; the disease is then called Hospital Gangrene, which is decidedly infectious, and only to be got rid of by removing the patient into pure air. The inflammation produced by the local application of certain morbid poisons may likewise end rapidly in sloughing ulceration.

During the inflammatory stage, which invariably precedes the sloughing, the soothing applications above mentioned, are to be employed: in some instances it will be advisable to apply *leeches* round the part, and general bleeding may be employed, if the patient be of a robust habit of body. When the sloughing has commenced, *carrot poultices* should be had recourse to, or a lotion, composed of fifty drops of *nitric acid* to a quart of water, may be constantly used, the strength being increased or diminished according to the patient's sensations. This application has an excellent effect in promoting the growth of healthy granulations. Oiled silk should be applied over the ulcer, until the slough be detached, in order to prevent the disagreeable smell which would otherwise arise from the mortifying parts. The state of the constitution must be carefully attended to. In most cases the administration of *opium*, as already recommended, is found necessary.

Sir A. Cooper recommends the following formula:—

No. 298.

Tincture of opium (laudanum), twenty drops,
Carbonate of ammonia, ten grains,
Tincture of cardamom, a drachm,
Camphor mixture, an ounce and a half. Mix.

This draught to be taken as a dose, three times a day.

To give energy to the system a nutritive and generous diet, with a moderate quantity of wine and porter may be allowed; spirits may be given to those who have been long addicted to their use; a state of rest is absolutely necessary; and the limb must be kept in a horizontal position. (See Mortification.)

URINE, INCONTINENCE OF.

When a person is unable to retain his urine, and it constantly passes off involuntarily, he is said to be affected with Incontinence of Urine.

Inability to retain the urine is a symptom of various disordered conditions of the urinary organs. In people advanced in life, it is frequently associated with retention of urine: the bladder is constantly full, and every movement of the body causes the urine to escape; in this manner it passes involuntarily, as quickly as it is secreted by the kidneys. (See Urine, Retention of.)

Incontinence of urine is often connected with a weakened or paralysed state of the lower limbs, which, in many cases, is caused by injuries done to the spine, or by some disorder of the spinal marrow. Sometimes, again, the paralytic condition of the inferior extremities, to which the incontinence of urine is obviously subordinate, comes on gradually, without any known cause. In such cases, the bladder does not appear to be distended; but its sphincter muscle offers no resistance to the escape of the urine, which dribbles constantly from the parts, to the great discomfort of the patient. The treatment generally relied on, in this form of the disorder, consists in cold bathing, more especially the daily application of the cold douche to the lower parts of the body—the application of blisters to the lower part of the back, (*sacrum*)—the internal use of

the *tincture of cantharides*, in doses of ten drops, three times a day, in half a teacupful of gum-water (see page 55,) or linseed tea—and tonic remedies, such as *quinine*, or the *prepared rust of iron*. In some cases, the introduction of the *catheter* has been found serviceable.

Incontinence of urine occurs as a symptom of *irritable bladder*; in this case, as soon as a small quantity of urine is collected in the bladder, the irritability of the organ becomes so great, that the patient is obliged to void it instantly. This is an exceedingly distressing disease, and arises from various causes. (See page 55).

Children are particularly liable to incontinence of urine: in general, they are troubled with it only when asleep; but in many cases, the calls to void the urine during the day are more frequent than in health; and the child, if spoken to sharply, or alarmed from any cause, makes water involuntarily. Many medical men have recommended corporal punishment, as the best remedy in such cases. Hufeland, a very judicious and able physician, advises, that a child guilty of wetting the bed during the night, should be so punished in the morning, that he shall continue to recollect it even when asleep. We have no hesitation, however, in saying, that to chastise a child for an act committed during sleep, and over which he could consequently have no control, is not only cruel but also completely useless. Who ever heard of any young person having been cured of this infirmity by such treatment? Children are keenly alive to the disgrace which is attached to it; and if it were possible, would gladly give up a practice which exposes them to the taunts and scoffing of their companions—a punishment which many boys feel more acutely than the repeated beatings inflicted by harsh parents and unfeeling schoolmasters. This nocturnal incontinence of urine sometimes resists every kind of treatment; but it usually gets well of itself, as the child grows up and acquires strength. Much benefit may be derived from tonic remedies; of these, perhaps, the most eligible is the *tincture of steel*, which should be given in doses of five drops, three times a day, in a wine-glassful of the infusion of gentian, or decoction of whortleberry (*uva ursi*), and continued daily for several weeks, or

months, according to the circumstances. A succession of blisters to the sacrum, or lower part of the back, have been often successfully employed. Bathing the lower part of the abdomen and genital organs, night and morning, with cold water, has often an excellent effect. The state of the stomach and bowels should be carefully attended to. Watery diet should be avoided, and tea prohibited in the afternoon. Eating shortly before going to bed is improper. The application of ligatures and *jugums* in boys, *pessaries* in girls, and similar contrivances, which mechanically prevent the discharge of urine, often do serious mischief, and are never followed by any permanent benefit. In all cases of this disease in the male sex, a small bag of oiled-silk, or Indian-rubber cloth (Macintosh), appended to the parts, will be found very serviceable as far as regards cleanliness; and a piece of the same description of cloth, about a yard square, placed under the hips at night, is also conducive to cleanliness and comfort.

URINE, RETENTION OF.

Retention of the urine, or strangury, as it is commonly called, is either *complete* or *incomplete*. In the former case, no urine can be passed, or only a few drops are voided with great straining, and at intervals, without affording any relief to the patient, whose state soon becomes one of the most distressing to which man is liable. In the latter case, the symptoms are not so urgent, and the patient passes, occasionally, a considerable quantity of urine, without the pain or distention at the lower part of the belly, being much, or in any degree, relieved, or the restlessness and symptoms of general excitement abated. In this form of the disorder, the bladder being filled and distended, flows over like a cistern, which, though constantly receiving and discharging water, is never completely emptied. The urine either dribbles out of the urethra, as is frequently the case in elderly persons, or is voided from time to time, in a full stream, so that the patient, in a given time, discharges a quantity equal to that which is expelled by a person in health, although the bladder still continues filled, and may be felt like a hard ball, on pressing with the hand over the lower part of the belly. Indeed mistakes have often arisen from neglecting this

manual examination; for the ignorant are likely to overlook the real nature of the disorder, when they find the patient voiding as much urine in the course of the day, as he has been in the habit of doing when in health.

The causes of Retention of Urine, are numerous and diversified; and the treatment to be employed, must therefore depend on the circumstances connected with each particular case.

When this disorder is associated with inflammation of the bladder, or the urinary passages, or a congested state of the mucous membrane about the neck of the bladder, the reader will find a short description of the symptoms to which it gives rise, and the remedial means to be adopted, at page 52, under the head of Inflammation of the Bladder.

Retention of urine sometimes occurs in persons who have been prevented from making water by delicacy, indolence, or other causes, until the bladder, from over-distention, has become so weakened, that it loses its contractile power, and is unable to empty itself. In this case, the feet ought to be placed in water as hot as it can be borne, and warm fomentations should be applied over the lower part of the belly, or the penis may be immersed in a basin of warm water; by these means, continued for some time, and the application of gentle pressure over the bladder, the patient will occasionally succeed in voiding his urine. The disorder, when depending on this cause, may be relieved by other methods of treatment; but in general it is found necessary to draw off the urine by means of a *catheter*. In many instances, this instrument must be employed twice, or thrice daily, or even more frequently, for several days, or even weeks, until the muscular structure of the bladder recovers its tone. A simple and excellent method of restoring the tone of the bladder, is to pour cold water on the lower part of the belly from a height, by means of a jug or tea-kettle: this should be done night and morning, until the catheter is no longer required. Retention of the urine, from a weakened or paralysed state of the bladder, may also arise from certain affections of the brain, or from injuries done to the spine, by blows or otherwise: in the latter case, some degree of insensibility and weakness of the lower limbs are generally present. This form of the disorder is often symptomatic of particular

diseases; it occurs sometimes in the course of fevers, painters' colic, dysentery, &c.: in all such cases, the state of the bladder should be carefully attended to, and the catheter employed, at least three or four times in the course of twenty-four hours, until the patient recovers from the disease on which the retention depends.

Many elderly people are affected with retention of urine, without suffering much pain; but the hard circumscribed tumour, formed by the distended bladder; may be easily felt, and if pressed upon with the hand, a small quantity of urine may be expelled. In such cases, medicines are of little use: the patient should learn to introduce the catheter himself.

Strangury sometimes arises from the internal administration of Spanish flies (cantharides), or their external application, in the form of blisters. In this case, there is a sensation of fulness and weight at the region of the bladder, attended with frequent inclination to make water, smarting, heat, and difficulty in voiding it. These symptoms are soon relieved by drinking freely of linseed tea, barley water, decoction of marsh-mallow, or gum water with nitre, as directed at page 55. In severe cases, it will also be advisable to take forty or fifty drops of the *tincture of henbane*, in two ounces of camphor mixture, every four or six hours. These remedies are also very serviceable in relieving the strangury which attends gonorrhœa: in this last case, much relief may also be derived from the immersion of the penis in warm water.

Many persons affected with stricture of the urethra suffer greatly from the disease now under our notice, especially those who are exposed to vicissitudes of temperature, or who indulge in drinking wine, spirits, &c. The treatment here consists in the use of purgatives, opiates, the warm bath, and blood-letting, if the individual be robust or full blooded. "Purgatives," says Sir Benjamin Brodie, "require some time to produce their effect, and if not taken at the commencement of the disorder, the symptoms are too urgent to admit of this delay. Where, however, a stricture is chiefly spasmodic, and the retention follows the too great use of fermented liquor or spirits, he recommends, in the commencement of the attack, a draught of the *infusion of senna*, with the *tartrate of potass*, and the

tincture of jalap. As soon," continues Sir Benjamin, "as this has fully operated, and the bowels are emptied, give thirty or forty drops of *laudanum* by the mouth, or order an opiate clyster to be administered, and, in all probability, the attack will subside." If these means fail, the catheter should be employed; and many patients subject to this disorder are able to relieve themselves by means of this valuable instrument. When the catheter cannot be introduced into the bladder, Sir B. Brodie recommends opium. "From half a drachm to a drachm of laudanum," he says, "may be given as a clyster, in two or three ounces of thin starch. If this should not succeed, give opium by the mouth, and repeat the dose if necessary, every hour, until the patient can make water. According to my experience, the cases in which the stricture does not become relaxed under the use of opium, if administered freely, are very rare."

In retention of urine from spasm at the neck of the bladder, the *tincture of steel* is a remedy which occasionally proves very beneficial: it may be given in doses of ten drops in a little water, every ten minutes: after six or eight doses have been taken, the urine sometimes flows freely. Spasmodic stricture has been frequently relieved, and a copious flow of urine procured, by dashing cold water on the lower part of the belly and thighs, when all other remedies had been tried in vain. This method of treatment was highly extolled by Sir John Floyer, of Litchfield, and Dr. Baynard, nearly a century and a half ago.*

* Dr. Baynard in his "History of Cold-Bathing," says, "of the power of *Cold Water*, in a suppression of urine, caused from too long retention, I have many instances,"—one of which is the following—"A Gentleman, at a long Tryal at the *Bar*, in a Title of Law, where his All was at stake, held his *Water* so long, that when the Tryal was over, he went to make Water, but could not, the *Fibres* of the Bladder being so much, and so long extended, that they could not contract. The Gentleman lay all night in extream Pain, and yet with a great desire to Urine but could not. The next morning he took several diuretick *drops*, as *sweet spirits of nitre*, &c., in white wine, &c., but to no purpose: I hearing of this by chance, bid his friend strip him *naked*, and wrap him round the waist and belly, with a wet *towel*, which as soon as done, he made water immediately, but was for some time afterward troubled with the *strangury*. And I have heard some of our *judges* complain, that by holding their *water* in tedious and long causes, that they have found much injury by the long retention of their urine, &c."

When retention of urine arises from a stone lodged in the urethra, or at the neck of the bladder, from enlargement of the prostrate gland, or from organic disease, nothing can be done without the aid of the surgeon.

When this affection occurs in hysterical females, the best remedy is the cold shower-bath, or dashing cold water on the lower part of the abdomen and thighs (cold douche), as already directed; measures adapted to the general disorder (see *Hysteria*) being also employed.

In extreme cases of retention of urine, when all other means have failed, it is the duty of the surgeon to withdraw the urine by puncturing the bladder, in order to prevent a fatal termination.

Persons subject to this disease should live abstemiously, and carefully guard against exposure to cold, sudden vicissitudes of temperature, wet feet, and every kind of severe bodily exercise; and of all things they should never neglect to attend instantly to a call to make water.

VACCINATION.

The improved method of treating small-pox by the free admission of fresh air into the patient's room, the avoiding of everything heating or stimulating, the use of cooling drinks, conjoined with other appropriate remedies, and the introduction of inoculation into England, by Lady Mary Wortley Montague, in the year 1721, had greatly diminished the mortality from that loathsome and dangerous disease; but it was not until 1798, that the illustrious Jenner announced the fact, that the human system could be effectually and permanently secured from its influence by Vaccination. In the course of two or three years from the time that this benefactor of his race began to promulgate his invaluable discovery—the most important recorded in the annals of medicine—the practice of vaccination had almost superseded inoculation throughout the kingdom, and is now known in the most remote countries in every quarter of the globe.

A tradition which had long existed among the peasantry in different parts of England, led Dr. Jenner to observe that in

the dairies of Gloucestershire the cows were subject to an eruption on their teats and udders, which was sometimes communicated to the hands of the persons engaged in milking them, and was attended in most instances by a slight degree of fever. He also observed that those who had undergone this disease, known under the name of cow-pox, were never afterwards liable to small-pox, either by inoculation, or by exposure to the most active contagion. After carefully investigating the causes and effects of cow-pox, during a period of upwards of twenty years, he satisfied himself of the correctness of the fact, that vaccination produced such a change in the constitution, as to effectually preserve it from the influence of the contagion of small-pox. He also maintained that both these diseases are essentially the same ; and this has since been confirmed, both in England and in Germany, by experiments which have clearly proved that the cow receives the small-pox by inoculation and changes it into vaccine : this, if again introduced into the human body, produces the true cow-pox. He also established the identity of the cow-pox, with the disorder called the *grease* in horses. It has since been ascertained that cow-pox may be communicated to man from the horse, without the agency of the cow ; and it is now generally understood, contrary to the opinion entertained by Jenner, that the disease may originate in the cow without access to horses.

Children, if healthy, and their skin perfectly free from every kind of eruption, should be vaccinated before the process of teething commences : the most suitable age for the operation is about the fourth or fifth month after birth. The vaccine matter, or lymph, as it is commonly called, should be taken from the pock, or vesicle, between the fifth and eighth days ; and, if circumstances admit, should be inserted in a recent state : it ought to be perfectly limpid and transparent. The operation is very simple. The operator having grasped the child's arm with a sufficient degree of firmness to keep the skin tight, should make six small oblique punctures, (three on each arm,) by means of a clean sharp lancet, charged with lymph. It will also be proper to charge the point of the lancet a second time with lymph, and wipe it upon the wounds : this precaution is particularly necessary, if the skin be unusu-

ally tough or the lancet blunt—circumstances, which in the first instance, may have prevented the matter from entering the wounds. In some children, the blood flows freely from the punctures ; this occurrence, however, does not appear to be of the slightest consequence, provided the incisions be of moderate depth, and the matter properly introduced under the skin.

The effects of vaccination are thus accurately described by Mr. Bryce :—“About the third day after the insertion of the virus of cow-pox, either by puncture, or by slight incision in the arm, a small inflamed spot may be observed in the part where the inoculation was performed. Next day, this spot appears still more florid, especially if the person be warm; and by passing the point of the finger over it, a degree of hardness and swelling in the part is readily perceived. On the fifth day, a small pale vesicle occupies the spot where the inflammation was, and the affection begins to assume the characteristic appearance of cow-pox. In place of inflammation, extending round the base of the vesicle, at this period, as is common in small-pox and most other pustular diseases, the whole has a milky-white appearance. The vesicle is now turgid, but evidently depressed in the centre, while the edges are considerably elevated. For the next two days, the vesicle increases in size, and retains the same character ; so that by the seventh it has acquired very considerable magnitude, and is of a circular form, if the inoculation was performed by a puncture, or of an oblong form if done by an incision ; but in both cases the margin is regular and well defined; while the centre, becoming still more depressed, and a small crust forming there, and the edges becoming more turgid, give the whole a very particular appearance and character, which, in my opinion, may readily serve to distinguish this affection from every other.

“The structure of this vesicle, as may be perceived at this period, is singular, and very different from the structure of the pustule which occurs in small-pox. In small-pox, the whole fluid of the pustule is contained in one entire or undivided cavity, and may be all readily evacuated by one small puncture. In cow-pox, however, it is very different ; for here the vesicle is greatly subdivided, or is composed of many cells ; the whole

somewhat resembling a honey-comb, with a general covering from the cuticle (scarf-skin).

“About the eighth day from the time of inoculation, inflammation begins to appear around the base of the vesicle. This increases for two, or perhaps three days more; and when at the height, the inflamed part is in general quite circular, and from half an inch, to two inches or more in diameter. This inflamed circle, or areola, acquires an erysipelatous brightness; and the whole, more especially the part contiguous to the vesicle, feels very hard and tense. At this period also, the vesicle still retains the concave appearance; the crust in the centre has considerably increased in size, and begins to assume a dark or brownish colour, while the turgid edge assumes more of a shining appearance, as if the contained fluid were passing into a purulent state. About the eleventh day the vesicle has attained its greatest magnitude, and then the surrounding inflammation and hardness begin to abate; and it is curious to observe, when this takes place, that the redness generally disappears first from the neighbourhood of the vesicle, and thence gradually towards the edge of the areola, often leaving, at the last, a complete but slender florid ring, or circle of inflammation, marking the circumference of the faded areola, the inner part having changed to a dirty yellow. The fluid in the vesicle, which was before very thin and transparent, is now very viscid and slightly turbid; and, after this period, the whole is quickly converted into a smooth, shining, and somewhat transparent dry crust, of a dark-brownish or red colour. This crust, unless forcibly removed, will remain upon the part for one or sometimes two weeks, and then fall off, leaving the parts underneath quite sound and entire.

“Such, then, is the general course of the affection, as it appears at the part inoculated; and, in the greater number of instances, especially in children infected with this ailment, little more is to be remarked; in some, however, and particularly in adults, marks of a constitutional affection are common.

“About the eighth day from the time of inoculation, the glands in the armpit become a little swelled, occasioning pain and stiffness on moving the arm. Headache, shiverings, a frequent pulse, and other febrile symptoms take place; and

these have been observed to continue, from a few hours to two or more days. These symptoms, however, are in general so slight and transient, as to require no aid from medicine."

The dark-coloured scab becomes gradually detached, and drops off about the twenty-first day, after the insertion of the lymph, leaving an indelible scar, which is of a circular shape, depressed, and indented with several small pits, corresponding to the number of cells, of which the vesicle had been formed.

Sometimes, in consequence of a bad habit of body, certain conditions of the atmosphere, the use of impure lymph, or other causes with which we are unacquainted, vaccination is rendered imperfect, and does not run through the regular course above described. In such cases, the part appears to fester, and is affected with a very troublesome itching: the pock, on the fifth day, is filled with opaque, straw-coloured matter, which has no resemblance to the clear limpid fluid contained in the true cow-pox vesicle. The scab which afterwards covers the part is of a yellow colour, and falls off on the tenth or twelfth day, sometimes earlier. The above are the usual appearances which result from imperfect vaccination; but severe inflammation, ulceration, the formation of scales, and other phenomena may be manifested; all of which may be easily distinguished from the uniform signs of cow-pox. When any of these irregular appearances occur, it is advisable to allow the parts to be perfectly healed, before re-vaccinating the child.

A popular notion is at present very prevalent, that the protective power of vaccination becomes gradually exhausted in the course of certain periods—seven or fourteen years; and parents often ask medical men, whether it is necessary to have their children re-vaccinated. No reasonable objection can be urged against this practice. The operation is attended with very little pain, and can be followed by no disagreeable consequences; in fact, it will produce no other effect than a slight degree of redness, and perhaps festering, if the vaccination in the first instance, has run through its regular course. But, on the other hand, if the first vaccine process has been incomplete, the second introduction of the lymph into the system will produce vesicles, and the true cow-pox, as above described. The second operation, then, will serve at least as a test of the

validity of the first; and beyond this it does not appear to us to answer any useful purpose.

We have mentioned that vaccine lymph should, if possible, be employed in a fluid state; but as recent matter cannot always be obtained, we must be careful in selecting the best method of preserving it in a dry state. The following are the usual modes of preserving lymph: 1. It may be preserved between two square bits of glass, which may be wrapped in tinfoil in order to exclude the air: this last precaution, however, is of very little consequence. When about to be used, it should be moistened with the breath; if much diluted, it seldom produces the desired effect. 2. Pointed pieces of ivory, shaped like the teeth of a comb, are much in use as vehicles of the vaccine matter. These are to be inserted into the wound made by a lancet, and retained there nearly a minute, until the lymph be absorbed. 3. The lymph may be preserved in glass tubes, hermetically sealed. 4. Mr. Bryce was of opinion, that the best method of transmitting cow-pox to warm climates, is by vaccine scabs: we have employed these repeatedly within the tropics, but without success. Indeed nothing is more destructive of the efficacy of vaccine matter, than heat; hence it seldom reaches our West India colonies, in an efficient state. It is there often necessary to vaccinate a dozen children or more, before a true vesicle can be produced; and it is said that no one has ever succeeded in carrying vaccine lymph which has preserved its virtue to Calcutta. In hot countries, we have found the lymph sent from England between pieces of glass to answer best: this is the plan now preferred in France, and other continental countries.

VARICOSE VEINS.

A varicose vein is generally of a blue colour, sometimes of a brownish hue, is considerably increased in size, appears knotted, irregular, and winds in a serpentine manner beneath the skin. Sometimes several veins enlarge in this manner within a small space, and appear coiled up, or, as it were, interlaced with each other, so as to form an irregular dark blue coloured tumour under the skin. In other cases, the enlargement or

dilatation is partial; and round, circumscribed, elastic swellings, or knots, appear at irregular distances along the course of a vein. Varicose veins increase in size, when the individual is engaged in any active exercise, or continues long on his feet; whereas, on the other hand, repose, the horizontal position, and pressure, cause them to diminish, or disappear altogether.

All veins are not equally liable to this disease; those which are deeply seated in the limbs, or in the internal parts of the body, very seldom become varicose; this morbid alteration of structure is, on the contrary, very common in the veins situated immediately under the skin. The superficial veins of the legs and thighs are most subject to this disorder: those on the fore part of the abdomen, and about the *scrotum*, are not unfrequently affected; but it seldom attacks the veins of the arms. When the veins about the lower part of the rectum and anus become varicose, the disease is then called piles. (See page 494.)

The disordered condition of the veins which constitutes this disease, has not been well ascertained. Some writers suppose, that a vein becomes varicose in consequence of its valves being ruptured or thickened, and thus rendered incapable of closing the vessels. In general, the walls or coats of the veins are not only preternaturally dilated, but also considerably increased in thickness: sometimes the thickening is only partial, and confined to the points more particularly dilated; in other instances again, the walls of the vessels are thinner than natural, at the parts where the greatest distention is observed.

The causes of this disease are not well understood. There can be no doubt, however, that in many instances it arises from the free circulation in the veins being obstructed from some particular cause—such as the pressure of a tumour, wearing tight garters; and, in pregnant women, it frequently occurs in the thighs and legs, as a temporary disorder, in consequence of the womb pressing upon the great trunks of the veins. It is also supposed to arise from weakness of the veins. The superficial veins on the breasts of wet-nurses are sometimes observed to be in a varicose state; and the same thing

occasionally occurs in the neighbourhood of old ulcers, and scrofulous or cancerous tumours. Children are never afflicted with this disease, and men are much more liable to it than women. Tall, robust people, who lead an active life, and those who are habitually under the necessity of remaining long on their feet, are generally the subjects of it.

At the commencement of the disorder, one or more veins, commonly of one of the lower extremities, sometimes of both, are observed to be larger than natural, but not attended with pain or any inconvenience. The dilatation and change of structure of the vessels advance very slowly: a year or two, or even a much longer period, may elapse before the patient is induced to pay particular attention to the disease. At length he observes, after walking or remaining long on his feet, that the veins become considerably distended, while the skin over them feels hotter than natural. Resting in the recumbent position soon removes these symptoms, but they are readily brought on again by the same causes. The veins being frequently distended in this manner, at last become permanently dilated, acquire a tortuous appearance, and roll under the skin. As the disease advances, the patient, after any active exercise, experiences a painful sensation of tension in the dilated veins, accompanied with numbness, swelling, and perhaps shooting pains in the limb, which may render him for a time incapable of walking: these symptoms are always aggravated towards night, and again diminished in the morning.

This disease sometimes gets well of its own accord, as the individual advances in years, or from inflammation and consequent adhesion of the veins: in other cases again, it continues to get worse, and occasions disorders of the limb, of the most serious nature. But in the majority of cases it remains almost stationary; and, although it may give rise to considerable pain at times, is rather to be considered as an inconvenient and troublesome affection than an important and dangerous disease.

The accidents to which this disorder may give rise, are loss of blood from perforation or rupture of the veins; the formation

of painful ulcers over the affected parts ; and sometimes inflammation of the veins.

TREATMENT. We know very little of the nature and causes of varicose veins, and are equally ignorant of any effectual method of curing them ; but it has, nevertheless, been proved by experience, that we have it greatly in our power to retard the progress of this affection ; to alleviate the pain, and to reduce the swelling by a properly-regulated and permanent compression. For this purpose a laced stocking is generally employed ; and this, with rest in the horizontal position, are the grand means of palliating the disorder.

Celsus, who is supposed to have lived in the Augustan age, informs us that the ancients were in the habit of extirpating varicose veins, either with the knife, or burning them out. (*Vena omnis quæ noxia est, aut adusta tabescit aut manu exciditur.*) But it must have required no ordinary share of courage, to have allowed the patients to bear the extreme pain, which such severe methods of treatment must of necessity have occasioned. We learn from Plutarch, that even the fierce and determined Caius Marius, although he bore the extirpation of a great number of varicose veins from one of his legs, yet refused to allow the other to be operated upon, declaring that the cure was worse than the disease. Nor, indeed, was the pain the least evil attending those operations ; many of the patients who submitted to them, in all probability fell victims to the inflammation, and other disastrous consequences which must have followed. Even in modern times, many people have died, in consequence of the removal of varicose tumours, with the knife. Sir Astley Cooper long ago protested against this operation, as being very injudicious and fraught with great danger ; indeed this practice has been found so hazardous, that it is now almost universally abandoned.

When the veins or the adjacent parts become inflamed, and painful, *leeches* should be employed, and *vinegar and water*, *goulard water*, or any other cold lotion, ought to be constantly applied to the parts. Sometimes cold applications do no good ; in such cases, bathing the part with a warm *decoction of poppy-heads*, or warm water with laudanum, will be found serviceable,

and more agreeable to the feelings of the patient. The bowels should be freely opened, by means of *calomel* and *jalap*, followed by *Seidlitz powders*, *Epsom-salts*, or any other cooling saline purgatives. Low diet and quietude in the recumbent position, are to be strictly enjoined, until the inflammation be entirely subdued.

The varicose veins of pregnant women disappear after delivery—the treatment consists in the local means above mentioned, and attention to position.

The application of a ligature round the diseased veins, burning them with caustic, and similar modes of treatment, have been successfully employed in many cases ; but none of them are free from danger, and should never be employed unless in extreme cases.

VARICOSE ULCERS are generally situated at the inside of the leg, they are for the most part superficial, and of an oval form. The varicose veins, from which they proceed, prevent them from healing like other sores ; indeed they are not only difficult to cure, but very liable to break out again.

The local application usually employed to cure this kind of ulcer, is the *black wash*, which is composed of a drachm of calomel mixed with a pound of lime water. A piece of lint wetted with this compound is to be placed over the ulcer, then a covering of oiled-silk, and over these the laced stocking is to be applied. The recumbent posture is indispensable. The patient being unable to take exercise while under the above treatment, should therefore live very abstemiously. In obstinate cases, particularly if there be an itching tetter round the ulcer, it will be proper to take one of *Plummer's pills* every second night, for a fortnight or three weeks, or, if necessary, until the mouth become slightly affected.

VOMITING OF BLOOD.

Vomiting of blood sometimes takes place in consequence of a blow on the stomach, from riding a rough-trotting horse, from strong mental excitement, or other accidental causes ; but, in general, it arises from disorders of internal organs.

In malignant diseases of a putrid character, where the blood

itself is diseased, as in small-pox, and malignant or putrid fevers, in which dark-coloured spots appear in the skin, vomiting of blood is a symptom which indicates extreme danger, and is generally to be considered as the forerunner of death.

Vomiting of blood often occurs in bad cases of scurvy ; but here it is not to be regarded as a fatal symptom. Sailors, when attacked by scurvy during a long voyage, are often greatly reduced by frequent hemorrhage from the stomach, and yet recover rapidly, after getting on shore, by means of vegetable diet, lemon juice, &c. (See Scurvy.)

In warm climates, vomiting of blood not unfrequently occurs from an obstruction in the liver, or enlargement of the spleen : it sometimes proceeds from constipation of the bowels, or may be caused by a simple or a cancerous ulcer in the stomach ; it occasionally arises in young unmarried women, in consequence of suppression or diminution of the menstrual discharge, and in the latter case is more alarming in appearance than really dangerous. The danger principally proceeds from the source in which the hemorrhage originates.

The quantity of blood vomited is sometimes so great, that the patient, after lingering during a longer or shorter period, sinks completely exhausted ; but when the discharge is moderate and does not occur often, the general health, in most cases, is very little affected by it; if on the contrary, the vomiting takes place frequently, and cannot be checked by the usual remedies, we have then reason to believe that permanent irritation of the stomach exists, which will probably terminate in organic disease of that organ, and ultimately destroy the patient.

It is of importance, in every case, to ascertain whether the blood is discharged from the stomach or from the lungs. In the former case, the vomiting is usually preceded by a sensation of weight, anxiety, and sometimes pain at the pit of the stomach; is not accompanied by cough, or any uneasiness about the chest ; the blood is usually in considerable quantity, of a dark colour, not frothy, and mixed in most cases with portions of food. When the discharge proceeds from the lungs, the blood is generally in smaller quantity, of a brighter red colour, frothy, and not mixed with the contents of the stomach ; a feeling of heat or other symptoms of uneasiness are felt at the chest ; and

the patient, in most cases, has been previously affected with cough, or has shown other symptoms of a disordered state of the lungs. Hemorrhage from the lungs is always a more formidable symptom than when it proceeds from the stomach, inasmuch, as in the former case, it is generally a symptom of pulmonary consumption. (See page 520.)

TREATMENT. In the great majority of cases, vomiting of blood from the stomach is merely symptomatic, and not a disease in itself; our remedies are therefore to be directed to remove the disorder on which it depends. If it arise from derangement of the menstrual function, the reader will find the necessary instructions in their proper place. If it proceed from constipation of the bowels, the treatment will be found under that head. In warm climates enlargement of the spleen sometimes takes place suddenly from congestion of blood, and gives rise to hemorrhage from the stomach: in such cases we have invariably found the *prepared rust of iron*, or some other preparation of that metal, continued for two or three weeks, remove the cause of the hemorrhage, and thus prevent its recurrence. (See page 403.)

In order to stop the hemorrhage it is sometimes necessary, in robust individuals, to draw blood from the arm, or apply leeches over the stomach; under opposite circumstances the abstraction of blood would, of course, be improper. In every case, it is advisable to give the patient cold drink—spring water—*iced water*, if it can be procured—or an *infusion of tamarinds*. Bodily and mental quietude are absolutely necessary; and the diet, for some time, should be of the very lightest quality, and in small quantities. The *oil of turpentine*, in doses of twenty to thirty drops, in cold water, every four or six hours, has been employed successfully, to arrest the vomiting; but British practitioners generally prefer the *sugar of lead*, which should be administered in the manner directed at page 60, No. 48. It will be necessary to give brandy, in small quantities, at short intervals, if the patient be much exhausted.

WARTS.

The excrescences from the skin, called warts, may appear on any part of the body; but they occur most frequently on the

hands. Persons who do not pay sufficient attention to cleanliness, and whose hands are exposed to the effects of climate, or hard labour, are most subject to them; but they are more frequently observed in children than in adults or old people. Dr. Jenner observed that persons employed in milking cows were particularly liable to them.

Warts have sometimes narrow necks, more frequently broad bases; they may be quite superficial, or attached to the parts beneath by roots; their surface is smooth, or rough and fissured; and they are not in general painful, unless when bruised or otherwise injured. The popular opinion that warts may be propagated by the blood, which they sometimes discharge when rubbed or roughly touched, is incorrect; but, it appears probable that the matter secreted by soft warts, is capable of producing a similar affection in other persons. The following case, in illustration of this opinion, is from Sir Astley Cooper's "Lectures on Surgery." "Mr. Chandler removed some warts, which were of very large size, from a patient in Guy's Hospital; and, as he was returning the knife, Mr. Guller, one of the dressers, put his hand forward, and it entered just under the thumb-nail. He left town for the south-western part of England; in a little time, he had an irritation about the nail, and a wart grew out from the spot where the puncture had been made. Being in practice, this was a disagreeable circumstance: it was frequently destroyed, but at each time it grew again. Afterwards he came to town, when he called on me, and told me the circumstance. I advised him to put on a blister, for the purpose of bringing away the nail, and, then, that the wart might be removed. He applied a blister, which readily removed the nail, but it also brought away the wart, and it never grew again." There is a great tendency to the production of warts in some individuals; in general they appear without any known cause.

TREATMENT. Warts frequently disappear of their own accord, but in many cases they increase in size, become troublesome, and require to be removed. Soft warts may be readily destroyed by applying the *tincture of steel* to their surface, or by anointing them daily with *mercurial ointment*. The best method of removing hard warts, is to cut them off with a

knife or scissors, and then apply caustic to destroy their roots. These excrescences may be destroyed by touching them repeatedly with *lunar caustic*, *blue vitriol*, or *nitric acid*; or they may be effectually removed by the application of the *chloride of zinc*. A wart with a narrow neck may be easily got rid of, by fastening round it a silk thread or a horse-hair. After it drops off, the root should be touched with caustic, to prevent it from growing again. The best application for destroying warts about the anus or genital organs, is a powder composed of equal parts of the powder of *savine-leaves* and *verdigris*.

WHITES.

WHITES, or FLUOR ALBUS, called by the French *Fleurs Blanches*. The mucous membrane of the *vagina* and womb, in the healthy condition of the parts, is always kept moist by its own secretion; but from various general or local causes, this mucous fluid, which is only intended to lubricate the parts, is often secreted in too great abundance, and runs from the *vagina*. But the discharge, far from being always white, as the vulgar term applied to the disease would lead us to suppose, presents various shades of colour; at first it is transparent, glutinous, resembles the white of eggs, and is not very copious; but in the more protracted cases, becomes thin, watery, or appears slightly milky, opaque, and is freely discharged. This disorder is not accompanied with pain, except occasionally in the loins, when the patient is fatigued; but never continues long without producing more or less derangement of the general health. In many cases the menstrual discharge is too profuse, irregular, or altogether obstructed; and, although the patient may be robust, and present the general appearance of good health, for a considerable length of time, yet, at last, she becomes pale, and at times haggard; the eyes lose their natural brilliancy, and the lips their colour; the feet and hands are often cold; the bowels are frequently constipated; she complains of general languor, and labours under the usual symptoms of indigestion; and, not unfrequently, the disorder is complicated with hysteria or chlorosis,

(green sickness): (see page 447.) In some patients the discharge is slight, and not constant, being only observed for some time after each menstrual period; in others, again, it is so profuse, that pieces of linen require to be constantly applied in order to prevent the fluid from running down the thighs; and, without the greatest attention to cleanliness, irritation or excoriation of the adjacent parts is induced. When it exists to this extent, the parts are often much relaxed; and sometimes there is considerable prolapsus, or falling down of the womb; but there is neither pain, heat, nor swelling, and the discharge is without smell. The term Whites is generally understood to apply only to the disease as above described, which is wholly unconnected with inflammatory action, and arises from debilitating causes—such as poor, watery, and deficient diet, living in the confined and impure air of large towns, or in damp, obscure, ill-ventilated situations, and light or imperfect clothing; hence the lower classes of females in the country, who wear worsted stockings and woollen under-garments, are very rarely affected with this disorder. It may also arise from trouble of mind, indigestion, obstructed or excessive menstruation, chlorosis, &c.; and it also appears in many cases to be hereditary.

But females are also very subject to discharges from the genital organs, of an inflammatory nature, resulting from various irritating or exciting causes—such as the use of rich stimulating food and drink; violent exercises, as dancing and riding on horseback; excessive sexual indulgence, improper habits, and irritation of the parts, in whatever manner produced; exposure to cold, difficult labour, an acrid state of the *lochia* or cleansings, worms, piles, &c. This form of the disease, when acute, cannot be distinguished from gonorrhœa; the symptoms are the same; the patient complains of a feeling of tension of the parts, heat, pain, &c. (See Gonorrhœa.). The discharge at first is milky, then of a dark yellowish appearance, and afterwards changes to a greenish colour; or there may be from the first a discharge of a glairy secretion resembling the white of eggs; this last indicates that the neck of the womb is affected. If the disorder terminate favourably, the discharge begins to diminish from the tenth to the twentieth

day, and gradually assumes the appearance described in the first form of the disease, and at length ceases entirely; or it may become chronic, and then a more or less thick discharge, of various colours, is voided, which may continue during an indefinite period. In some cases the secretion is devoid of smell; in others, again, it is more or less fetid. This variety of the disease may be characterized by symptoms of a much milder description; the degree of severity must, of course, depend upon the intensity of the cause, the constitution of the patient, and other circumstances.

This disease is met with at all ages: it not unfrequently occurs in childhood, and sometimes appears shortly after birth. A similar discharge is also not uncommon in the male sex. It prevails in large towns to a much greater extent than is generally supposed. M. Ricord states, that, in Paris, women may be said to have habitually a discharge, whatever name may be given to it, whether leucorrhœa, gonorrhœa, or whites: it affects all ages and all ranks. "If I were called upon," says this writer, "to estimate the proportion of the discharges in the male and female, I should say, that it is a hundred times greater in girls than in boys—a thousand times greater in the adult female than in the male."

In the acute form of the disease, and in chronic cases when the discharge acquires an acrid character, a similar disorder, which in many cases cannot be distinguished from gonorrhœa, is sometimes communicated to the male, (see page 302:) hence disputes occasionally arise between man and wife, without the slightest ground for suspecting each other of infidelity. Cases of this sort, no doubt, frequently occur, where delicacy prevents the parties from consulting their medical attendant; and in many instances the judicious practitioner, by explaining the nature of the affection, has the satisfaction of preserving domestic harmony, or of reconciling the husband and wife, whose suspicions and accusations against each other had rendered both exceedingly unhappy.

The discharges from the genital organs which are caused by ulceration or cancer of the womb, polypous tumours, stone in the bladder, &c., being merely symptomatic of those disorders, do not therefore come under the head of Whites.

TREATMENT. In the acute form of the disease, the patient should confine herself to low diet, and keep her bowels open with *Epsom salts*, or any other cooling saline purgative. Considerable benefit may be derived from bathing the parts frequently, with warm water or a *decoction of poppy-heads*; and warm water with laudanum, or *warm Goulard-water*, prepared by mixing two or three drachms of the extract of lead to a pint of water, may be frequently injected into the vagina. When the pain, heat, and other symptoms of inflammation have subsided, astringent injections should be employed. "The patient," says Dr. Blundel, "should place herself in the recumbent position, with the hips raised, and the thighs a little separated, and, being furnished with a proper syringe, she charges it with injection; beginning, for example, with one drachm of alum to the pint of water, and introduce it to the upper part of the vagina; then gently depressing the piston, she empties the instrument, lying five or ten minutes after each time of using the injection, to prevent the fluid from immediately returning, which it must necessarily do, if she resume the erect posture." But the injection principally relied upon at present, is a solution of *lunar caustic*, (*nitrate of silver*), three, six, or even ten grains to each ounce of water, employed twice or thrice a day.* A strong decoction of oak-bark may also be found useful.

In the form of the disease first described, which is usually associated with constitutional debility, or a disordered condition of the general health, astringent injections are also to be employed; but more confidence is to be placed in suitable regimen and diet, and the constant use of tonic remedies, than in any other plan of treatment. One or two grains of *quinine*, formed into a pill, or mixed with a little port-wine, may be taken as a dose three times a day; or from ten to twenty drops of the *tincture of steel* in a little cold water, twice or thrice daily. Constipation of the bowels should be prevented by the occasional use of the pills, No. 247, page 446; and whatever local treatment may be employed, the *bidet* should be used at least twice a day. Sponging the back and loins every morning with cold water, containing common salt in solution, or

* This injection will stain, if allowed to run upon the linen.

sea-bathing during the season, will be found serviceable. Exposure to sudden vicissitudes of temperature should be avoided—flannel should be worn next the skin—slops and watery-diet must be abstained from, and a mild though generous diet, in small quantities frequently repeated, with a moderate quantity of wine, may be taken—change of air and scene—and, in a word, every means should be adopted to improve the general health. (See pages 446 and 448.)

WHITLOW.

Whitlow is well known to be an inflammatory and exceedingly painful affection of one of the fingers or thumbs, sometimes of one of the toes, generally terminating in the formation of matter. There are three kinds of whitlow, varying in severity, according to the part of the finger in which the inflammation is seated. But in order to render this more easily understood, it may be well to give the reader some idea of the structures subject to the disease, and the cause which renders it so much more painful than external inflammation in other parts.

The skin of the forepart of the fingers is tough, strong, and although it has but little thickness, is richly furnished with blood-vessels and nerves; the latter are admirably arranged in innumerable minute papillæ or points, at the parts where the sense of touch is more immediately exercised. The skin is closely covered by a thin, smooth, flexible layer, called the cuticle or epidermis, which is secreted by the skin, and is constantly wearing and becoming renewed. This substance is void of life, and is full of little holes, called the pores of the skin, through which small drops of sweat are seen to ooze in warm weather. It increases or lessens in thickness, according to circumstances; on the soles of the feet, and on the palms of the hands of labourers, it is often thick and horny. Beneath the skin is a thick cellular substance, intersected by many thin fibrous partitions, forming numerous small cells, filled with little masses of fat. The cushion thus formed to sustain the skin, is intended to give to the extremities of the fingers that degree of firmness and elasticity, without which the function of touch could not be properly performed. Under this cel-

lular tissue, and attached to the bone of the last joint of each finger, is a thick, strong, membrane, called the *periosteum*. The second and third joints are also covered with this membrane, and have between it and the cellular substance, the tendons or parts which are essential to the movements of the fingers, enclosed in a strong fibrous sheath. Now, in the *first form* of Whitlow, the inflammation is confined to the surface of the skin, at the point of the finger; sometimes it extends round the base of the nail. In the *second form*, the inflammation is seated in the cellular substance under the skin. In the *third form*, the disease attacks the membrane which covers the bone at the extremity of the finger; and in severe cases extends upwards to the fibrous sheath, which binds down and retains the tendons in their position. But it must be kept in mind, that these three varieties of the disease are only to be recognized at their commencement, or in mild cases; for it often happens that the inflammation is at first superficial, and afterwards extends to the more deep-seated parts, or it commences in the membranous structures near the bone, and extends outwards. In fact, in severe cases, the whole organization of the finger is involved; and if the disorder be improperly treated, the bone is destroyed, and one or two of the joints may be lost, or rendered rigid and useless.

CAUSES. The most common causes of Whitlow are bruises, scratches, or excoriations, pricks with needles, pins, or other sharp instruments; pulling out small portions of the hardened cuticle, at the angles of the nail where it joins the skin; thorns, splinters, a portion of bristle from a nail brush, or any other extraneous body, lodged in the point of the finger; the introduction of acrid matter into a scratch; a wound of the finger; and the dirty, and generally incurable habit, which some people have of biting the nails. Sometimes no cause can be assigned for Whitlow.

The *first*, which is much the mildest form of the complaint, usually arises from a prick, or slight bruise of the finger, particularly when the injury is inflicted at the root of the nail.

The pain at the commencement is slight, and accompanied with a sensation of itching; the part soon becomes slightly

swollen, red, and shining, while a feeling of throbbing is experienced at the point of the finger. After twenty-four or forty-eight hours—sometimes not until the expiration of three or four days—the scarf-skin or cuticle rises from the true skin, so as to form a vesicle filled with a turbid, reddish, or yellowish-coloured fluid, which may be situated at the end of the finger, or at the root of the nail; and then the pain, which had gradually become very distressing, and even so severe as to prevent the patient from sleeping, is much abated.

When the vesicle bursts, and the serous fluid is discharged, the true skin appears, covered with a thin layer of yellowish-coloured matter, or it is slightly ulcerated, or even perforated, so as to communicate with the cellular substance beneath. The inflammation, in this species of Whitlow, is generally of the kind described at page 277, under the head of Erysipelas; and if, at the commencement, the whole of the inflamed part, and some distance round it, be gently touched with lunar caustic, in the manner directed at page 145, the disorder may be very quickly and completely arrested in its progress. But if this method of treatment be not resorted to at an early stage of the inflammation, or if it be employed without producing the desired effect, it will then be proper to apply warm poultices of linseed, or bread, moistened with laudanum, until a vesicle, as above described, makes its appearance. This should be punctured early with a lancet, or sharp pen-knife, or cut open with scissors, in order to allow the matter to escape. The poultices are to be continued for two or three days, and afterwards *Turner's cerate*, or any simple dressing, may be applied. Under this treatment the ulcerated part readily heals, new scarf-skin forms over it, and the finger soon assumes its natural appearance. In some instances, matter forms under the nail, which is detached in consequence, and falls off; but this loss is supplied, after a time, by the formation of a new nail.

In the *second* form of the disease, or that in which the inflammation is seated in the cellular or fatty substance under the skin, the pain is more severe than in the preceding case; and is even, in many instances, very distressing, before the finger presents any appearance of swelling or redness. But these last-mentioned symptoms are not long in exhibiting

themselves, although for some time they are not so well marked, as the severe pain which the patient feels would lead us to anticipate. In the course of three or four days, the swelling gradually increases, until the finger attains twice its natural size; the redness, pain, and tenderness are greatly augmented, and the patient cannot bear the slightest pressure upon the finger. The swelling extends to the palm of the hand; in severe cases, the whole hand becomes affected, and the pain shoots upward to the elbow-joint. Matter now forms; and if an opening be not made for its escape, it may accumulate under the skin, from the point of the finger up to the hand, or even extend into the palm of the hand. When at last the matter finds vent, and the parts heal, the finger appears greatly reduced in size, in consequence of the cellular substance having been destroyed by the suppuration; while the joints, from the adhesions which have taken place, are rendered stiff and immovable, the point of the finger being no longer capable of exercising the sense of touch. In this case—which is easily distinguished from the first, by the severe pain, and the symptoms of general excitement, which are always experienced for some time before redness and swelling of the finger are manifested—the treatment must be of a more active description. Six or eight *leeches* should be applied to the finger, which after their removal is to be kept for some time in warm water, in order to promote the bleeding; warm poultices, with laudanum, as in the preceding case, are then to be employed; and to moderate the feverish symptoms, a tablespoonful of the *tartar emetic mixture* (No. 243 page 425) should be given every two or three hours, or at longer or shorter intervals according to circumstances, so as to keep up a slight degree of sickness at stomach. By these energetic measures, we may sometimes be able to check the progress of the inflammation; but in general the most powerful and best directed treatment fails to effect this desirable object. If therefore at the expiration of twenty-four or thirty hours, the pain and inflammation be not abated, a free and deep incision should be made lengthwise at the point of the finger, in order to prevent suppuration, or to give vent to matter if it be already formed. In either case, by adopting this step early, the patient

is soon relieved from pain, and the disastrous consequences, which would otherwise follow, are effectually prevented. Immediately after the opening has been made, the finger should be immersed in warm water; and as the blood flows from the wound, the patient's suffering ceases. This simple though painful operation is attended with no risk, and may be performed by any one: the principal point to be attended to, is to make the incision sufficiently deep to reach the seat of the inflammation, or the matter, if it be already formed. Emollient poultices are afterwards to be applied; and in the course of a day or two matter begins to be discharged from the wound, which soon fills up and heals.

In the *third* form of Whitlow, whether arising from a punctured wound, or from any other cause, the inflammation is seated in the periosteum, or membrane which covers the bone of the last joint, or in the tendons, and their sheaths higher up. There is perhaps no kind of bodily suffering which equals this in intensity; and the acute pain gives an intimation of the nature of the disorder, which is not to be mistaken. It may be well here to make trial of the treatment recommended in the last case; although it does not often prove successful. Making an incision, as already directed, is indeed the only measure on which much reliance can be placed: and, to be of service, this should be done within the period already mentioned; because, if the smallest quantity of matter be thrown out from the membrane of the last bone of the finger, or be pent up within the sheaths of the tendons, which rest upon the second and third bones, the pain becomes so excruciating that high fever is produced, to sleep is impossible, and the patient may even become delirious or be seized with convulsions. Not only the finger, but the hand and wrist also become swollen; the pain extends to the elbow, and even to the shoulder, and, if vent be not given to the matter, it spreads among the tendons, and may even accumulate in the palm of the hand, while the finger-bones become diseased, and are destroyed. If under such circumstances the patient escape with the loss of one joint, he may consider himself fortunate. If the last joint of the finger be chiefly affected, the incision should be made as already directed; but if the pain and inflammation be seated higher

up, the cut should be made at one side of the finger ; and care should be taken to carry it down to the bone, whether it be required at the point of the finger, or higher up near the hand. The subsequent treatment is the same as in the preceding case.

WORMS.

The production and development of worms in the body, is one of the most remarkable facts in connexion with disease. Various theories have been advanced, with regard to their origin ; but the subject still remains involved in the greatest obscurity. These parasites are found most frequently in the intestinal canal ; but they have been observed in the bladder, kidneys, liver, brain, and eyes ; indeed, there is scarcely an organ or structure of the body, in which they are not occasionally seen. The body is infested with various kinds of worms, which have all been minutely described by scientific writers ; and each texture or organ seems to have its peculiar species, which is generally limited to that organ. But we intend here, to confine our observations to the three varieties of these animals which are generally found in the bowels ; namely, the long round worms (*lumbricoides*), the small white worms (*ascarides*), and the tape-worm (*tænia*).

The general symptoms which indicate the presence of worms, are the following :—the face is pale, there is a bluish or livid-coloured circle round the eyes, the countenance frequently changes colour, the appetite is variable and capricious, sometimes voracious. There is itching of the nostrils and of the anus, disturbed sleep, and grinding of the teeth ; the belly is swollen, though not hard, the stools are slimy and irregular, and griping pains are sometimes felt in the belly. Children who are troubled with worms are generally affected with short dry cough, and pains in the chest, unattended with difficulty of breathing ; the mouth fills with saliva on awaking in the morning, and before meals ; and they complain of a gnawing sensation at the stomach, which is diminished or entirely relieved by eating. Sometimes they are attacked with bleeding from the nostrils, and convulsive fits. In many cases, there is irregularity of the pulse, emaciation, and slight feverish symp-

toms occasionally. But the most important symptom, and indeed the only one on which complete reliance can be placed, is the discharge from the body of worms, or of portions of them.

The *round-worm* varies from six to ten inches in length, is usually found in the small intestines, and resembles the common earth-worm in its general appearance; it chiefly infests the bowels of children, sickly persons, and those who are badly fed. The inhabitants of England are less troubled with this, or perhaps any other kind of intestinal worm, than those of other countries—a fact which may be accounted for, from their being better fed, and consuming more animal food, than the people of any other country in the world. The round-worm is very common among the dark races of men, who inhabit warm climates, probably owing to their subsisting principally on crude vegetable food, and not using a sufficient quantity of salt, as a condiment. The Hindoos, who live almost entirely on rice, are seldom free from them; and if we are to believe the testimony of travellers who have visited the interior of Africa, these unwelcome guests are equally troublesome to the inhabitants of many parts of that continent, more especially in the countries where salt is scarce. They are also very common among the negroes in our West India islands; indeed the children of all classes in those colonies are particularly subject to them. Worms of this description often accumulate to a very great extent: we have met with instances, where from one to two hundred of them have been expelled from the bowels in the course of a few days; and, in the West Indies, cases have frequently come under our notice, where several have been vomited up at once, and discharged alive from the mouth. The particular symptoms which lead us to suspect the presence of this species of worms, are swelling of the abdomen, and sharp or colicky pains felt occasionally, in different parts of it, more especially about the navel, slimy evacuations from the bowels, and a disagreeable breath. In most instances, several of the general symptoms already enumerated are also present; but it often happens that the first indication of the bowels being infested by these filthy intruders, is the appearance of some of them in the stools.

The *thread-worm*, or *maw-worm*, is from a quarter to half an inch in length, and is usually seated in the rectum or lower bowel. It is remarkable for the quickness of its movements. People of all ages are liable to be troubled with worms of this description; but they are more common in the bowels of children, than in those of adults, or persons advanced in life. The particular symptoms occasioned by thread-worms, are—itching about the fundament, which is often very distressing when the patient is warm in bed, occasional scalding or difficulty in voiding the urine, a bearing-down sensation at the lower bowel (tenesmus), an oozing of slimy matter from the fundament, irritability of temper, and, sometimes, great depression of spirits. This, and also the round-worm, occasionally crawl out of the anus during the night.

The *tape-worm* is composed of numerous pieces united by joints, and is generally an inmate of the small intestines, where it lives on the chyle, or milky juice, which is intended to nourish the body. It is seldom less than several feet in length, and is frequently discharged in pieces four or five yards long. In some instances, it has been known to measure upwards of fifty feet. The tape-worm is more common in adults, particularly females, than in children. It is often found alone; hence the term *tænia solium*. The notion that each joint of this worm possesses an independent life, is a popular error prevalent in this and probably in all countries. Itching about the nostrils and anus, pain in the belly, and colic, more or less severe, occurring occasionally, are signs which may lead us to suspect the existence of tape-worm; but there is no unequivocal symptom by which the presence of this worm in the bowels can be ascertained. It may give rise to all the general symptoms above noticed, and many more which we need not enumerate, inasmuch as they might proceed from other causes, or it may exist in a person apparently healthy. But it seldom happens, that tape-worm occasions much pain or inconvenience, or injures the general health, without portions of it becoming detached, and passing out of the body along with the fœces. When this is observed, there can of course be no longer any doubt with regard to the nature of the case, and the proper

remedies for expelling the worm should be immediately had recourse to.

TREATMENT. It does not often happen that much difficulty is found in expelling the *common round worms*. The remedy usually resorted to for the purpose of removing them is the *oil of turpentine*, which was introduced into practice by Dr. Fenwick, of Durham, in 1810, for the destruction of the tape-worm, and is now successfully employed in destroying all kinds of worms which infest the bowels. Before commencing with this remedy it is advisable to administer some purgative medicine. Three or four grains of *calomel*, with from four to fifteen grains of *jalap*, according to the age of the patient, may be taken in a little jelly. In this country round worms are rarely met with after fifteen years of age ; but in the event of adults being troubled with them, a stronger purgative will be necessary.

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Calomel, from three to five grains,
Rhubarb, six grains,
Jalap, twenty-five grains. Mix.

Turpentine may be given to children with perfect safety in the dose of a dessertspoonful, along with half a cupful, or more, of milk, linseed tea, gruel, or any other demulcent drink. The best time to take it is in the morning, about half an hour before breakfast, but if it produce much sickness of stomach or vomiting, the next dose should be given the following forenoon about two hours after breakfast. The dose must be repeated daily for three or four days or a week, a dose of castor oil (a dessert spoonful or more, according to the age) being given every second day along with the turpentine, until all the worms are expelled. The internal use of oil of turpentine is attended with no risk whatever ; even in large doses it either passes off by the bowels or is vomited up without doing any harm.

In the West Indies the remedy generally employed is *cow itch*, which seldom fails in effectually clearing the bowels of this species of worms. It should be given as directed at page 191.

The celebrated American physician, Dr. Rush, of Philadelphia, was very successful in destroying worms with common salt,

which he prescribed in doses of a half a drachm upon an empty stomach in the morning.

To destroy *ascarides* or *thread-worms* the best plan is to give the oil of turpentine by injection, because, as we have already had occasion to notice, these worms are lodged in the lower gut near the fundament, where they are supposed to feed on the mucus which that part secretes, and, consequently, the remedy when used in this manner is sent immediately to the parts which they inhabit. From a dessert spoonful to a table spoonful of this medicine, with a teacupful of thin starch, or gruel, injected into the bowels, and retained there as long as possible, often brings away great numbers of these small worms involved in slimy mucus, or rolled into a ball. An injection which will be found equally efficacious is composed of half an ounce of the *tincture of steel* in half a pint of water. Purgatives of *calomel* with *aloes*, three or four grains so each, according to the age of the child, should be given from time to time. *Aloes* is the best purgative in such cases, because it acts more particularly on the lower bowels. In fact, pills composed of equal parts of *aloes*, *calomel*, and *scammony*, have frequently the effect of completely relieving the patient from worms, without the aid of any other remedy. After the expulsion of all kinds of worms, it will be proper to take from three to five drops of the tincture of steel in a wineglassful of chamomile tea, or of the infusion of gentian thrice a day for a fortnight, as a tonic.

Various remedies have been employed with success to destroy tape-worm, such as the root of the male-fern, Chabert's-oil, Dippel's-oil, and the rind of the pomegranate-root; but the internal use of the rectified oil of turpentine has been found so efficacious in this country, that it is now preferred to all other medicines and plans of treatment. When tape-worm occurs in adults, which is generally the case, the turpentine must be given in sufficiently large doses to act as a purgative, or it should be given along with castor oil, in order to ensure its speedy expulsion from the bowels. The usual dose is a tablespoonful or half an ounce, in conjunction with the same quantity of castor oil, or twice the quantity of olive oil, which may be taken floating on milk, or on cinnamon or peppermint water. Many practitioners give much larger doses—three or four tablespoonfuls, or more,

and then it usually produces giddiness and a feeling of intoxication, which soon wear off if the patient remain quiet; but in some instances these unpleasant sensations, accompanied with headache, have continued for two or three days. In all cases it is desirable that the medicine should be taken about two hours after breakfast; if taken in the morning on an empty stomach it would probably produce nausea and be vomited up. Barley water, linseed tea, chicken or mutton broth, may be taken freely during the day, in order to prevent the medicine from irritating the urinary organs, and to facilitate its passage through the bowels. It may be necessary to increase the dose to two or three tablespoonfuls, and in all cases the remedy should be given every second day until the worm be expelled.

Worms, by the irritation which they produce, and the disorder which they occasion by drawing their sustenance from the juices intended to nourish the body, exercise over all the vital functions and even over the intellectual faculties, in some instances, a more or less injurious influence, which is felt throughout the whole animal economy, and may give rise to diseases of a formidable, and even dangerous character, such as epilepsy, St. Vitus's dance, catalepsy, hysteria, somnambulism, and other obscure nervous affections. Hence, in all these disorders, when no other cause can be traced, we have reason to suspect the existence of worms in the bowels, even though none of the ordinary symptoms by which they are manifested be present. For, it has been observed in many cases that the remedies usually administered with the intention of destroying worms, have been the means of curing diseases which have obstinately resisted all other methods of treatment.

PREVENTIVE TREATMENT. Plainly dressed animal food well seasoned with common salt,* good bread with a sufficiently

Salt is absolutely necessary as a condiment to our food, and appears to be essential to the prevention of worms. According to a law which once existed in Holland, criminals were condemned to live on bread made without salt, the effect of which was that worms were generated to such an extent that a lingering and terrible death is said to have been the consequence. Salt is not only an excellent preventive, but is one of the safest and best remedies that can be employed against worms. In the dose of from half an ounce to an ounce taken every morning before breakfast, in warm barley water or thin gruel, it has had the effect of expelling tape worm after turpentine and other powerful remedies have been

liberal allowance of wine or porter, plenty of exercise, and the occasional use of purgative medicine, constitute the best means of correcting that state of the system which appears to be favourable to the development of worms.

tried in vain. The same quantity dissolved in water and used as an enema is a popular, and frequently a successful method, of destroying the ascarides or thread-worms.

SUPPLEMENT.

ZINC.

The *Sulphate of Zinc*, or *White Vitriol*, in the dose of twenty-five or thirty grains, acts quickly as an emetic, and is therefore the best medicine that can be used for this purpose, in cases of poisoning from laudanum and other narcotic substances. It is employed as a tonic and astringent in the dose of two grains twice or thrice a-day in chronic dysentery, whites, and other discharges from the mucous membranes, and in the humid asthma of old people. As an antispasmodic, it has been found useful in epilepsy, St. Vitus's dance, and hooping cough. In the proportion of two grains to the ounce of rose water, or common spring water, it is much employed as an external application in chronic ophthalmia, as an injection in gonorrhœa, and as a wash for sore nipples and ulcers. A solution of from ten to twenty grains has been advantageously used as an injection in gleet, and in whites.

The *Oxide of Zinc* or *Flowers of Zinc*, is sometimes given in epilepsy, St. Vitus's dance, and other nervous diseases, in the dose of from two to ten grains, three or four times a-day (see *Epilepsy*).

The *Chloride of Zinc* is of great service as a caustic or escharotic ; and has been strongly recommended for this purpose by Mr. Ure, in cases of cutaneous and sub-cutaneous cancers, and *noli me tangere*.

INFLAMMATION.

Inflammation is the term applied to that state of a part in which it is *hot, swelled, red, and painful*, accompanied with more or less fever and constitutional excitement. The four local

symptoms enumerated, are generally present when Inflammation is seated externally ; and it appears probable that they are also present in Inflammation of internal organs. In the latter case, the parts being concealed from view, the symptoms are, of course, more obscure ; and, consequently, demand greater care in their investigation. The principal signs by which we judge of internal Inflammation are pain, which is increased when the part is pressed upon with the hand, derangement of function, fever, and buffiness of the blood ; but in this article we intend to confine our observations chiefly to Inflammation, as it appears in the external parts of the body ; the inflammatory diseases of internal organs are attended with their respective series of symptoms, which are noticed under various heads (see Brain, Bowels, Lungs, &c., Inflammation of.)

Numerous theories have been advanced, and many volumes written, to explain the nature of Inflammation. Some authors have maintained that it results from obstruction in the small vessels called *capillaries* (the channels of communication between the arteries and veins, see page 335), caused by a thickened state of the blood, by spasm in the extremities of these vessels, or other circumstances which make the blood stagnate in the affected part ; others again have thought that it depends on increased action in the capillary vessels, and many are of opinion that diminished action is sufficient to account for the symptoms of Inflammation ; but this problem, though one of great importance to the pathologist, is still to be resolved. All writers agree in referring the phenomena of Inflammation to a perverted or morbid action of the capillaries. On this important part of the circulatory system, the various secretions, the growth of parts, and absorption, appear in a great measure to depend ; but as we can offer no explanation of the intimate nature of the capillary function, nor of the secretory action of the liver, kidneys, and other internal organs, when in a healthy state, further than that they depend on nervous energy, or vital power ; it follows that we are compelled to refer the derangements of their actions to the same source. One of our best writers on surgery, Professor Burns, of Glasgow, in concluding a very valuable essay on this important subject, makes the following observation :—"I cannot go, and I know not any one who has gone

farther, than merely to say that Inflammation is an action altogether new, in a part where organization is soon made altogether new, and that this action, in its acute and exquisite form, is greater than in the natural proportion to the power of the part; but the disproportion varies much in degree, in different cases. And farther, it is evident that the action, may remain long in a higher or lower degree, and yet not go beyond the power of the part; so that inflammatory action in the abstract, cannot be defined to be necessarily an acute and short lived process, for it may exist without any essential change beyond that early effected, for many weeks, if not for months."

Inflammation may be either circumscribed or diffused, acute, or chronic, common or specific. *Common, or healthy Inflammation*, is that which proceeds from mechanical or chemical causes, as wounds, bruises, strains, lacerations, or any unusual violence; from substances lodged in any part of the body, as thorns, splinters, or bullets; from burns or scalds, the application of strong acids or alkalies, excessive cold, preternatural determination of blood to a part; and it may attack any organ, or structure of the body, without our being able to ascertain the cause. *Specific Inflammation* is manifested under various forms, each of which is distinguished by its progress, and by certain peculiarities in its symptoms, which are owing either to the state of the patient's constitution, or the specific nature of the exciting cause. For example, if Inflammation were brought on by roughly introducing a catheter or bougie into the urethra or urinary canal, or in consequence of the passing of gravel from the bladder, it would be called common Inflammation; whereas, if the canal, where inflamed from impure connection, it would be called specific Inflammation. The principal specific Inflammations are the scrofulous, rheumatic, gouty, syphilitic, erysipelatous, and scorbutic.

Inflammation can scarcely, in every instance, be looked upon as a disease, inasmuch as it sometimes becomes one of nature's most valuable resources in restoring the healthy condition of parts, which have suffered from external agents. When a wound has been inflicted, or a foreign body lodged in the flesh, Inflammation of the injured part takes place, which produces the effect of healing and cicatrising the wound, and expelling the

foreign substance ; or when a part of the body is destroyed by fire, or by gangrene and mortification, Inflammation is soon developed, and a line of demarcation may be observed surrounding the dead part, which, by this process is gradually detached, and at last thrown off. These and similar results of Inflammation have induced some authors to divide it into healthy and morbid ; but this distinction is too uncertain and arbitrary, because, although Inflammation may be serviceable in certain cases, it may, nevertheless, under circumstances which appear exactly similar, produce the very worst effects.

Although in ordinary cases Inflammation is characterised, as has been already mentioned, by pain, heat, redness, and swelling, yet all these symptoms are not invariably present ; the absence of one or more of them depends upon the structure of the part affected, and on the duration and species of the Inflammation. They may also arise from a simple excess of stimulus, as exposing a sound part to the action of fire, irritation by rough or long continued friction ; or the eye may present the appearance of Inflammation, from the irritation produced by particles of sand or any other extraneous substance, and be quickly removed by withdrawing the cause, and applying cold water to relieve the excitement ; but if these or other stimulating means were too long continued, the withdrawing of the cause would not remove the effects ; Inflammation is excited, and will, in spite of treatment, go through certain stages, and may produce its worst consequences, such as induration, suppuration, or mortification. The line of demarcation between a state of simple excitement, producing heat, redness, &c. and the state in which the structure of the part affected becomes changed, cannot be pointed out ; neither can the exact degree of stimulus, necessary to produce Inflammation, be ascertained. Some individuals are affected more readily by the ordinary causes of Inflammation than others ; a bruise, contusion, wound, or a thorn, may produce in one, only a simple mechanical division of the part, or merely a temporary degree of stimulus ; whilst in another, similar causes may produce suddenly a profound inflammatory action, which may go on to a great extent, and endanger life. Observation has also shown that, in consequence of certain conditions of the atmosphere, in which the air has probably served as the medium of

introducing some unknown elements into the system, many persons have been attacked with more or less severe Inflammation of certain parts, although the weather has been mild, and very little constitutional excitement produced, whereas, at other times, though the heat has been excessive, and the action of stimulus strongly manifested by general excitement and quickened circulation, yet inflammatory disorders have not prevailed to any unusual extent. It may also be remarked, that the circumstances which prevent our being able to point out at what period an excess of stimulus commences to change the organic condition of a part, also prevents us from ascertaining to what extent the inflammatory process must be carried, so as to leave the part in such a manner changed, as to prevent its being restored to its primitive healthy condition; for, it is doubtful whether a part which has once been decidedly inflamed ever recovers its natural state, this may be presumed from its being more liable to Inflammation ever after than any other part.

The *red colour* of an inflamed part is owing to the distention of the blood-vessels, and to the flux of blood into the small capillary vessels, which previously received only the colourless parts of that fluid. Redness is the most constant symptom of Inflammation, and is in fact very seldom absent, although at times it is not very distinct. It differs in intensity according to the degree of Inflammation, the nature of the part, and the character of the disease; and may be met with of every hue, from a delicate rosy tint, scarcely perceptible, to a purple, violet, or dark brown colour. When moderate Inflammation occurs in a healthy person it produces a pale redness, when more severe a scarlet colour; the darkness of the colour increases with the duration of the Inflammation; in chronic cases it usually presents a livid or brown appearance. The redness is always brightest at the centre of the inflamed surface, and in parts situated nearest the heart.

The *swelling* arises from the distention of the blood-vessels, and from bloody fibrin, which has the appearance of jelly, having escaped from the vessels into the fatty or cellular substance of the inflamed part; the redness also, no doubt, depends in a great measure on this last cause. In the neighbouring parts, where there is no Inflammation, the swelling, if any exist, is owing to

a portion of the serous or watery part of the blood having escaped into the loose cellular texture. The swelling is always most considerable where the part is soft and richly supplied with blood-vessels, and in persons of feeble and relaxed habit of body.

The *pain* differs in kind as well as degree, according to the nature or acquired sensibility of the part; its character and intensity are very variable. It may be dull and aching, smarting and hot, or sharp and cutting; in general it is proportioned to the intensity of the Inflammation; and, in many cases, its violence depends upon the nature of the cause: for example, the pain which results from the Inflammation of a burned part is exceedingly acute. In some cases it is so violent as to destroy life; in other instances, again, is so slight as scarcely to be felt by the patient. Sometimes the pain is only felt when the patient moves the inflamed part, or presses upon it; in many instances, on the other hand, it is experienced constantly, and is greatly aggravated by the slightest movement or pressure. Pain is generally attributed to the pressure of the swollen parts upon the extremities of the nerves; hence, when the inflamed part, whether from the nature of its texture, or from its situation, cannot yield to the swelling which usually accompanies Inflammation, the pain is very severe, whereas, in loose structures, the disorder is commonly attended with very little pain; this, however, is not invariably the case, as certain organs which are soft and yielding in their texture, occasion the most severe pain when they are inflamed.

In some parts very little pain is felt until Inflammation has advanced to a considerable extent; and a paralytic limb may inflame without sensation. The different kinds of pain, and in fact the existence of pain at all, cannot be satisfactorily accounted for.

The *heat* of the part is in most cases proportioned to the degree of redness, and both these symptoms vary with the situation of the inflamed part; the sensation of heat is always most intense where the part is seated at the greatest distance from the heart, as the point of the finger in whitlow, or the feet in gout. In erysipelas, which is a peculiar inflammation of the skin, heat is the most distressing symptom, whence, it was formerly called, *ignis sacer*,

or St. Anthony's fire. But the feeling of heat experienced by the patient is not owing to a proportionate elevation of temperature in the part, and is much more apparent than real. From experiments performed by a celebrated surgeon of the last century, John Hunter, it was ascertained that the heat of an inflamed part is not commensurate with the patient's feelings; that it does not exceed the standard or central heat of the body; that the greatest increase of temperature takes place in parts which are most remote from the centre of circulation, and naturally coldest.

When Inflammation is violent or extensive, it gives rise to general disturbance of the system; the skin becomes hot; the pulse full, quick, and frequently hard; the tongue is white, there is considerable thirst, and if blood be drawn from the arm, and allowed to rest, it presents a buff-coloured appearance on its surface, and is cupped (see page 435).

Inflammation terminates in several ways. When the symptoms gradually disappear, while the fluids, which have been separated from the blood and effused into the cellular substance, are absorbed, and the part gradually regains its healthy state, the disorder is said to terminate in *resolution*. This is the most favourable termination of Inflammation, and fortunately the most frequent. The most formidable termination is in the destruction of the life of the part; this is called *mortification* (see page 476). Inflammation also terminates in the formation of a peculiar fluid, called *pus* or matter, which is named *suppuration* (see Abscess). These are the principal terminations of Inflammation; but sometimes it ends in the production of some solid structure (tumours), differing in quality from that naturally existing—this is called by some authors *diseased nutrition*. In other instances again, the inflammatory process terminates in a peculiar action called *absorption*, by which the solid or fluid parts of the body are removed.

The common, or, as it is technically called, phlegmonous Inflammation, is the form of the disorder from which all the general descriptions of Inflammation given by writers are usually drawn. Its chief seat is in the inner surface of the true skin, and the cellular substance immediately beneath it, thence it extends to the adjoining skin and cellular membrane. It is mani-

fested by swelling, which is more or less extensive, circumscribed, hard, and elastic ; dryness, redness, and increased heat of the part are also observed ; and more or less severe pain is experienced, which soon becomes lancinating, and afterwards throbbing. The redness is most conspicuous at the centre of the tumour, and does not disappear when pressed upon as in crysipelas. These local symptoms may be accompanied with slight shiverings, thirst, loss of appetite, quick pulse, and sickness at stomach ; but this state of general excitement only occurs when the Inflammation is severe. When proper treatment is adopted, all the symptoms frequently disappear, and the part is restored to its healthy condition ; but in many cases suppuration takes place, which is indicated by certain symptoms described under the head of Abscess. These are the ordinary terminations of phlegmonous Inflammation, but it may end in any of the ways above enumerated.

The symptoms are not so well marked when the Inflammation is deeply seated in the cellular membrane, or among the muscles and their fibrous coverings. In this case the swelling is often comparatively slight, the skin is tense and shining, but not red, and the heat of the part is very little increased. The pain is severe, constant, generally lancinating or throbbing, and greatly aggravated by the slightest movement of the part. The action of the heart and arteries is augmented, and the usual symptoms of inflammatory fever are fully developed. This form of Inflammation usually terminates in suppuration, sometimes in gangrene and mortification, but rarely in resolution.

TREATMENT. Every inflammatory disease is preceded by a certain state of the affected part, to which the term *irritation* is generally applied. Now this preliminary stage may in most cases be speedily checked by the prompt and active employment of bleeding, and other lowering measures ; but if it be neglected until the texture or organization of the part is changed, and Inflammation is confirmed, the disorder in too many instances will run its course, in spite of whatever measures may be adopted to arrest its progress. Of how much importance, then, are the first hours in all inflammatory diseases, more especially in Inflammation of the brain, heart, lungs, or other organs essential to life.

The treatment of Inflammation, in the first instance, consists in those means which tend to make it terminate in resolution, or, in other words, to restore the natural action of the part. The first indication to be attended to, in order to attain the object is to remove, if possible, the cause which has produced the disorder. If it has been brought on from the lodgement of a musket or pistol-ball, a splinter of wood, a thorn, &c., the extraneous body, whatever it may be, must be immediately removed ; but if the cause be of a less direct nature, such as a disordered condition of the digestive organs, it cannot be remedied at once ; the treatment necessary for its removal is often tedious, and demands the judicious use of medicine, as well as the most rigid attention to diet and regimen, in conjunction with the means required for the removal of the local disorder, which we shall now proceed to notice.

In every case of Inflammation there is increased excitement, and a preternatural accumulation of blood in the part ; these circumstances naturally suggest the necessity of the abstraction of blood, and of the application of means to subdue the increased action. In the common or phlegmonous Inflammation, above described, general blood-letting is found necessary only when the disease is extensive, or the feverish symptoms run high ; no remedy is then so powerful, and ought, therefore, never to be neglected ; but whether this measure be found necessary or not, local bleeding, either by leeches or cupping, should be freely employed, as long as there is any chance of our being able to cut short the disorder. Cupping acts quickly, and allows us to withdraw more blood than by leeches ; this method is particularly serviceable in Inflammation of the hip and shoulder joints, in pleurisy, and in the rheumatic affection of the walls of the chest, called *pleurodynia* or bastard pleurisy ; but it cannot be employed in every case. If the Inflammation be seated in the elbow, or ankle joint, in the testicle, or in the female breast, and, in fact, in all ordinary cases, the application of leeches is to be preferred. When the leeches have fallen off, the flow of blood must be promoted by the repeated application of cloths dipped in warm water. To assist the action of the bleeding, and terminate the Inflammation by resolution, if possible, we should apply cold lotions, such as Goulard water, vinegar and water, or

cold water, constantly to the part.* These constitute the most powerful means which we possess, next to the withdrawing of blood, in abstracting heat and subduing Inflammation. The bowels are to be kept open with salts and infusion of senna, calomel and jalap, or any other active purgative, and the patient must confine himself to low diet. If the symptoms subside, and we succeed in producing resolution, the part will remain tender and slightly swollen for some time; and must, therefore, be properly supported by bandages, rubbed gently from time to time with the hand, and allowed to rest until it be again fit to perform its natural functions. But if, notwithstanding the diligent use of these means, we are unable to procure a dispersion of the swelling and Inflammation, and a sensation of throbbing at the part commences, while other symptoms indicating the formation of matter are observed, the above treatment must be

* The following are the directions given by Dr. Macartney, of Dublin, for the application of water-dressing:—"The substance that I have generally made the immediate object of application, is the finest and softest lint; and for the covering material, either oiled silk, or a thin plate of Indian rubber. Simple as this mode of dressing may appear, it requires to be managed with care, and attention to many circumstances, which would appear trivial, to persons unacquainted with the nature of the remedy. Two, three, or four layers of the lint should be first folded together, according to the size of the part to be covered, taking care also that the soft side of the lint is the outer one. In wetting the lint the first time, it is necessary to either float it in the water, before folding it, or, if it be first folded, it should be pressed between the fingers, to urge the fluid into the interstices of the lint, which receive fluid with difficulty, until all the air they contain be expelled. The lint, when applied, should just contain as much water as not to drop. The oiled silk, or Indian rubber, should project so much beyond the margin of the lint as may prevent evaporation, which will vary according to the shape of the part on which the dressing is laid, and the thickness of the folded lint. It is of great importance to use the wet lint without any bandage that can give to the part affected the least feeling of constraint. The figure of the parts sometimes renders this difficult to effect, without stitching the silk into a particular shape, which is much better than using any strict bandage. The periods for changing the lint must vary according to the nature of the case; but as a general rule, three times during the day, and twice during the night (if convenient), will be sufficient. In cases where the inflammation is moderate, and the skin unbroken, the dressing will only require to be changed every twelve hours. At each time that the dressing is renewed, the lint and oiled silk should be carefully washed, and when it is applied to ulcers, fresh lint should replace that taken off, the utmost cleanliness being of the first importance. French oiled silk is very much superior to the English; it does not adhere to the skin, and therefore does not fret it."

discontinued, and remedies necessary to produce suppuration employed (see Abscess and Boils), or if symptoms of mortification be manifested, we must refer the reader to the article on that subject.

To notice under this head the various remedies which are employed in subduing Inflammation of internal parts, would be to repeat what will be found in detail in different parts of this volume. We shall, therefore, conclude by reminding the reader of the advice, which we have frequently had occasion to urge, and which cannot be expressed too strongly, namely, to draw blood freely from the arm as soon as inflammatory symptoms are manifested, and to repeat the operation within a few hours, if the patient be not relieved. Many lives may be saved by the early use of the lancet, and no harm can accrue; whereas, if we wait until the Inflammation be confirmed, and it often advances very rapidly, the abstraction of blood will not prevent the disease from running through its different stages, and would tend, without doubt, in many cases, to exhaust the patient's strength, and make matters worse.

Chronic Inflammation differs from acute only in degree. General bleeding is not requisite in this form of the disease, unless, as occasionally occurs, after remaining a considerable time in a dormant state, it become suddenly roused into action from some exciting cause; and then, of course, the treatment appropriate to acute Inflammation will be necessary for its removal. But local bleeding by cupping, or the application of leeches, is of the greatest service, and should be repeated at longer or shorter intervals, according to the age and constitution of the patient, the degree of Inflammation, and the importance of the part affected. The bowels are to be well cleared out by purgative medicine, and afterwards mercurials may be given in alterative doses (see page 464); two grains of *blue pill*, or the same quantity of *Plummer's pill*, may be taken twice or thrice a day, in order to keep up constantly a gentle action in the whole system during a longer or shorter period, which must be determined according to the circumstances of the case. Counter-irritation is also very beneficial in chronic Inflammation. The *tartar emetic ointment* may be used for this purpose, or a plaster made of equal parts of *Burgundy pitch* and *yellow wax*, with the addition of

thirty or forty grains of *tartar emetic*, according to the size of the plaster and the degree of irritation required.

PALSY.

Every healthy person has the consciousness that he can move certain muscles of his body at will; the muscles, which are thus obedient to the commands of the will, are called *voluntary*. The will or volition resides in the brain; from the brain it is conveyed by the nerves to the muscles, and by the combined action of the latter on the bones, or soft parts, are produced the various and complicated movements of the human frame. But under certain circumstances of disease the muscles become paralysed, that is to say, they refuse to obey the commands of the will; and as this may arise either from disease of the brain, in which, as we have said, volition resides, or from some affection of the nerves, which are thereby rendered incapable of transmitting any impulse from the brain and spinal marrow to the voluntary muscles. Palsy then consists in a more or less complete loss of action in the muscles; like a watch, the main spring of which is broken, the palsied parts refuse to move, because the primary cause of motion is either destroyed or deranged.

It were impossible for us, in a work like the present, to offer any thing more than a very general idea of Palsy, and of its treatment; in the following observations, therefore, we shall confine ourselves to the common forms of this disease, as it affects the voluntary muscles, and when it is not a consequence of apoplexy.

Paralysis from apoplexy generally occupies one side of the body; when it arises from disease of the spinal marrow, the lower extremities only are affected; but in many other cases the Palsy comes on more or less slowly, and compromises certain muscles, leaving others of the same part untouched; the Palsy likewise may be complete or incomplete; in the former case the muscle or muscles attacked are unable to effect any movement whatever; in incomplete Palsy the power of motion is much diminished, but not altogether lost.

CAUSES. As we have already mentioned, we do not notice that form of Palsy which occurs as a consequence of apoplexy, because

it has already been described under the head of Apoplexy (see page 29); many other diseases of the brain and spinal marrow may excite it, such as tumours, inflammation, with softening of the mucous substance, injuries caused by external violence, &c.; Palsy may also arise from a great variety of causes, the chief of which are pressure on some particular nerve, cold, the action of poisons, whether metallic or animal, sexual indulgences, derangement of the digestive functions, worms, &c.

When Palsy occurs without having been preceded by an attack of apoplexy, it often comes on in a gradual manner. Occasionally the symptoms indicate some disturbance of the circulation within the head; the patient complains of severe headache, tingling in the ears, flushing of the face, and throbbing of the arteries, which supply the head with blood.

In other cases the loss of power over the muscles takes place suddenly, being preceded by a kind of fit or momentary loss of consciousness, which bears some resemblance to an attack of apoplexy.

In many cases of Palsy the only symptom present is a gradual loss of power in the muscle or muscles affected; in many other cases the loss of power is preceded by severe pains in the part, cramps, a sense of numbness or tingling, and a curious feeling of coldness; the patient now observes that he does not possess full power over his limbs; he is unable, for example, to grasp any body firmly in the hand, or he drags the leg after him in walking; this state may continue for a very uncertain time, or it may gradually increase until all power of motion is completely lost; in short, the degrees of Palsy vary from simple weakness, which is scarcely perceptible to any one except the patient himself, up to the most perfect loss of muscular power; the sensibility of the part may disappear with the destruction of the muscular force, or the part, though totally incapable of action, may retain its natural degree of feeling.

The bowels of persons labouring under Palsy are usually very costive; and if the disease have extended to the muscles of the bladder, the patient is either unable to expel his urine, or it dribbles constantly from him; the digestive organs are commonly unaffected, and the appetite remains good, but the faculties of

the mind, especially the memory, are weakened, when the disease has continued for any great length of time.

TREATMENT. In the treatment of Palsy, especial attention must be paid to the exciting cause of the disease, and to its nature ; that is to say, as to whether it depends on disease of the brain, of the spinal marrow, or merely of the nerves distributed to the palsied part. It is almost unnecessary to mention, that all exciting causes must be avoided or removed ; recent paralysis, connected with disease of the brain, must be treated in the way described under the term apoplexy ; in that form of the disease which depends on some affection of the spinal marrow, much benefit may be expected from the use of blisters along the lower part of the spine ; or an issue may be placed on either side of the spine, and kept open for a considerable time. The bowels should be moved twice a day by purgative medicine.

As a general and safe rule, we may lay down that no stimulating remedies should be given internally, nor any stimulating applications used externally in *recent* cases of Palsy. We mention this for the guidance of non-medical persons, who probably would be unable to distinguish when the Palsy depends on acute disease of the brain and spinal marrow, or when it is simply produced by loss of power in the nerves, or by sympathy with some other organ.

When, however, the paralysis has existed for some time, and when there are no evident signs of excitement about the head or spinal marrow, certain local and general means may be had recourse to for the purpose of restoring their lost power to the nerves.

The paralysed parts may be rubbed with the *liniment of ammonia*, with *spirits of turpentine*, or with a mixture of equal parts of these two substances ; at the same time local irritation should be kept up along the spine (over the neck when the arm is affected, and along the back for the legs), by means of the tartar emetic ointment, blisters, or seatons. The application of electric or galvanic currents to the nerves which supply the palsied muscles is often attended with very great benefit ; but the use of these means requires much perseverance and attention. Sulphureous baths have been found to act favourably in several cases of paralysis.

Of internal remedies, a great variety has been employed in the treatment of paralysis. Few, however, seem to have any decided effect in rousing the dormant energies of the nervous system in this complaint, with the exception of *nux vomica* and its active principle called *strychnia*; but the latter is a very powerful poison, and should never be administered without the utmost caution. The *nux vomica* may be given in the form of powder or extract; two grains of the powder or three of the extract constitute a proper dose for the full grown person to commence with; the dose must be gradually increased by two or three grains a day, until from fifteen to twenty grains are taken during the twenty-four hours. *Strychnia* is so powerful a poison that it will be safer for non-professional persons not to trust themselves with its administration.

DIET.

The term Diet, in the common acceptation of the word, is applied to the various substances which we take into the stomach, for the purpose of supplying materials for the formation of blood and the nourishment of the body. The immediate connection of this subject with the comfort and health of every person, must render it of the greatest consequence: and the interest which it excites amongst people of every grade of knowledge need not surprise us, when we bring to mind that the most important consideration towards the preservation of health, and the integrity of the intellectual faculties, is the due regulation of the quantity and quality of our food—in fact, it may be said, that a healthy state of the body depends upon a proper adjustment of the supplies to the growth and waste of the body.

The greater part of the diseases to which we are subject arise from errors in Diet; and attention to our food, with temperance in other respects, is not only of great importance in preserving health, but is likewise essentially necessary in the cure of the numerous disorders to which the human frame is liable; many of these, indeed, may be cured by an appropriate Diet alone, Dr. Arbuthnot, who wrote on this subject about a century ago, very justly observes, that what we take daily by *pounds* must be

at least as important as what we take seldom, and only by grains, or teaspoonsful. But it is unnecessary to pursue this argument further, for, however reluctant we may be to alter our habits, we all admit that Diet exercises a powerful influence in modifying the animal economy.

Under the head of indigestion we have given an outline of the complicated process that converts solid food into the nutritious juice called *chyle*, which is constantly being mingled with the blood, and carried with that vital fluid to all parts of the system, for the purpose of supplying the waste of the body, and the loss which the various organs incessantly sustain in performing their functions.

It would serve no useful purpose, here, to notice the arguments advanced as to whether man is properly a herbivorous or carnivorous animal: from the formation of the teeth, as well as the structure of the stomach and intestinal canal, we have reason to infer that he is neither one nor the other exclusively; his digestive apparatus appears evidently ordained for various and widely different kinds of food, in order that he may be able to accommodate his diet to climate, habits and situation, whether geographical, moral, or political. We shall now, therefore, proceed at once to a short examination of the properties of the principal alimentary substances, and their action on the digestive organs. To examine in detail the effects produced on the animal economy by the immense variety of aliments used by the higher classes, would give the subject a much wider range than would accord with the object of this volume; nor, indeed, will our limits allow us to do more than notice briefly the common articles of food, and to give a few general rules for the Diet of the invalid.

The great object of digestion is the formation of chyle; hence, whatever substances yield this fluid in the largest quantity, and of the best quality, will necessarily afford the most nourishment. But the various substances used for food differ greatly in their nutritive and digestive qualities. Some articles of Diet are highly nutritious, and are nevertheless difficult of digestion; other substances, again, pass quickly out of the stomach without supplying much nourishment to the body. Food is

introduced into the stomach with the object of being converted into a fluid fitted to become a constituent part of the living body; it might, therefore, naturally be presumed that substances, already of an animal nature, and similar to the structure which they are intended to supply, would be better adapted for this purpose than either herbaceous or farinaceous food; and this is the case, for animal food contains a greater quantity of nutriment in a given bulk than any kind of vegetable aliment. But it is not alone sufficient that substances used for food are capable of being assimilated; their consistence ought to be soft and loose enough to allow them to be easily acted upon by the digestive organs; because the more tender the aliment, and the easier it is divided, the more readily will it be dissolved by the gastric juice, and converted into chyle; on the other hand, hard and close-grained substances are proportionably slow and difficult of digestion. We also see that persons who eat quickly, without properly masticating their food, are often troubled with indigestion, and frequently void fragments of various alimentary substances, which have passed through the intestinal canal in a half digested state. Old people, who have lost their teeth, being unable to chew their food sufficiently, suffer in the same manner. The digestibility of food, then, is owing, in a great measure, to the tenderness of its texture and minuteness of division. It has been shown, by direct experiments on the living body, that the different kinds of animal food, whether of flesh, fish, fowl, or game, are more or less easily digested, according as their texture and tenderness of fibre render them easy of mastication and solution: these properties in butcher's meat depend greatly on the time that has elapsed since the animal was killed, on its age, sex, food, mode of killing, and of cooking.

The kind of food which the animal consumes in its natural state, or on which it is fed artificially for the purpose of fitting it for the table, will considerably modify the character of its flesh. Animals which feed on corn are firmer in their flesh than those eating the herbs; and animals using the mountain herbs are firmer and more savoury than those feeding on the succulent and watery herbage of the plains. Animals which feed on flesh are coarse, heating, and alkaline, and few of them can be used as food without proving injurious to the system. Castration renders

all animals fatter, and causes the fat to be better mixed through the fibrous parts, while it improves the quality of the flesh, and makes it more tender. The flesh of the female is also much more delicate than that of the entire male; and it appears to be generally understood, that depriving females of the ovaries (*spaying*) improves the flavour of the flesh. The texture of the muscular fibre is likewise improved by violent exercise; bull baiting, hunting, and the old German custom of whipping a pig to death! produce the effect of rendering the flesh more easy of digestion. It is also well known that a teaspoonful of vinegar given to a fowl some time before killing it, renders the flesh more tender when intended for immediate use. Wild animals, when young, are easier of digestion than the same species in the domestic state; and the parts principally exercised, as the wings of birds, and the legs of swift animals, are harder and of stronger texture than the rest of the body. The effect of decomposition or incipient putrefaction on fibrous animal food, is to loosen its texture, render the muscular fibre less hard, and consequently more easy of digestion; this is probably aided by its becoming ammoniated, for food in this state, there is reason to believe, increases the flow of the gastric juice, and consequently promotes a more rapid and effectual formation of chyme. Game, after hanging a sufficient length of time, acquires another quality, which no doubt tends to render it more digestible; a pheasant, for example, if used too soon, is comparatively insipid, but if kept a proper length of time acquires a much finer flavour, and this, by gratifying the palate, increases the flow of saliva, while, by sympathy, the stomach is excited, the secretion of gastric juice is augmented, and digestion is consequently promoted. But tainted meat, though easier of digestion, is more heating, and the former quality appears only to apply to a sound stomach; high flavoured game would be too exciting for an invalid, and too strong for his stomach. Decayed cheese, like tainted game, contains ammonia, and is, therefore, stimulating; a little of it, taken after a full meal, excites the stomach, and acts like a dram, but would be highly improper for the stomach of an invalid. But of all the means by which the texture of our food is acted upon, and its digestibility modified, cookery is certainly the most important; a few remarks, therefore, upon the principles which render the

ordinary culinary processes serviceable in the preparation of our food, may be deemed useful.

ROASTING. Flesh, when roasted, and neither too much nor too little done, contains nearly all the juicy parts, and more of the nutritious principles, than boiled meat. Roasting softens the tendinous parts better than boiling, while the crust retains the juice, and gives the gravy a brown colour and an agreeable taste; but during the process it is computed that the meat loses about a third of its weight by the melting out of the fat and the evaporation of the water. By roasting, the fibre is not rendered so soft and pulpy as by boiling, and the meat is consequently not so easy of digestion, for, as we have already mentioned, the digestibility of food depends in a great measure upon the softness of its texture; but roasted meat is much more nutritive; it has been calculated that one pound contains as much nourishment as two pounds of boiled meat. The gelatinous and viscid meats, however, of the younger animals, veal and chicken for example, are more wholesome and easier of digestion when roasted; for, by boiling, the gelatin acquires properties which render it very oppressive to the digestive organs. Many people suppose that under-dressed meat is easier of digestion, but this is a mistake, for, when not sufficiently done, its texture is more dense, and it is, therefore, not so well calculated for a weak stomach.

BOILING. Meat by boiling loses more of its nutritious qualities than by roasting, but is rendered softer and more digestible; this, however, depends greatly upon the manner in which the process is conducted. If boiled too long, or too fast, the albuminous part becomes coagulated, the flesh is rendered hard, and consequently not so soluble in the stomach. The water should not be brought quite to the boiling point, but should be kept long at a temperature a little under it; by this plan of cooking, which is a kind of stewing or infusion rather than boiling, the meat will be found more wholesome and easier of digestion. Mutton in boiling generally loses about one-fifth, and beef about one-fourth of its original weight; the loss consists of fat, gelatine, and osmazome, which are dissolved in the water. The quality of the water is also of importance; beef, or mutton, boiled in hard water, is more tender and juicy than when soft water is used. Water of this description, or with a considerable quantity of salt

in solution, is also best suited for the boiling of fish, rendering it firmer and more highly flavoured. Vegetables, on the contrary, require soft or rain water, and care should be taken to have them boiled sufficiently; by neglecting this precaution their digestibility is greatly diminished, they are rendered unwholesome, and injurious to the digestive organs. Many stomachs cannot digest carrots, cabbage, peas, and other vegetables, if not well boiled; these, and similar substances, if not rendered sufficiently soft by boiling, pass through the alimentary canal without undergoing much alteration; and in some stomachs they ferment and run into acid, causing heartburn and disorders of the bowels.

BROILING. This mode of cooking in some degree resembles roasting, but is a much quicker process. If the portion of meat is not too thick, and its fibre cut across, the heat quickly penetrates and loosens the texture, while from the suddenness of the operation the juices are prevented from being carried off, and it is thus rendered peculiarly tender. In fact there is no kind of cooking more wholesome than this; a well broiled rump steak or mutton chop is juicy, and rich, and is by far the most nourishing and the best suited for the stomach; but the proper method of broiling a steak does not appear to be understood out of England, and indeed many *amateurs* declare that a steak cannot be had in perfection out of the city of London. From the nutritive qualities of meat dressed in this way, and its being easier of digestion, broiling is considered the best mode of cooking where it is deemed proper to give animal food to restore the strength of invalids, and is preferred by those who strengthen themselves by *training*.

FRYING. This is the most unwholesome kind of cooking; meat dressed by this process contains the empyreuma from the boiling butter or fat, is difficult of digestion, and very apt to disagree with the stomach. Many persons cannot eat fried meat without suffering from heartburn; it should be carefully shunned by invalids.

BAKING. By this operation, which is inferior to roasting, the meat is equally done and tender, but the retention of the oil or fat, which is rendered empyreumatic by the action of the heat, prevents baked meat from being easy of digestion. Baking, however, may be safely employed in the preparation of light

puddings for convalescents; but butter should not be used for the purpose of browning the surface of the pudding.

Writers on dietetics have adopted several ways of classifying the substances used as food; but since chemistry has shown that, whether taken from the animal or vegetable kingdom, they all derive their nutritive qualities from a few proximate principles, and, that the various articles of Diet differ chiefly in the proportions in which they contain these principles, it has been usual to arrange them according to the one which is most abundant; for, though two or more are mixed up together in the state in which nature presents them to us, yet one generally predominates. We shall, therefore, proceed to make a few observations on some of the principal articles of Diet under the following heads:—I, FIBRINOUS; II, GELATINOUS; III, ALBUMINOUS; IV, FATTY AND OILY; V, CASEOUS; VI, FARINACEOUS; VII, MUCILAGINOUS; VIII, SACCHARINE OR SWEET; IX, ACIDULOUS Food.

FIBRINOUS FOOD. Under this head are ranged butcher's meat, and all the fleshy or muscular substances used as food. These are chiefly composed of *fibrin*, which is placed in the same relation to the flesh or muscular parts of animals, that fecula or starch is to farinaceous substances; but fibrin is more quickly digested than fecula, and, taken in equal quantities, is considerably more nutritious. In general the nutritive qualities of the different kinds of animal food are proportioned to the quantity of fibrin which they contain. It has been demonstrated that the elements of chyle are more abundant in animal than in vegetable food. Azote or nitrogen is the principal element in the animal fabric, and forms a part of all the tissues of the body; it is therefore contained abundantly in fibrin, gelatin, and albumen, the chief component parts of flesh; while it enters very sparingly into the composition of vegetable substances, and in many cases is altogether absent. Hence the principal constituents of flesh are more nearly allied to the nature of chyle than starch and sugar, the principal constituents of vegetables. It has also been proved that the vegetable substances which contain the greatest quantity of gluten furnish the most nutriment, probably because this principle affords a considerable portion of azote.

The red meats, more especially those which are dark coloured,

are embued with a principle called osmazome; this substance is contained in the fibrin, to which it gives a stimulating action, and tends greatly to aid in its assimilation; although of itself it does not appear to possess any nutritive quality. It is to osmazome that the stimulating effects of animal food are attributed; and to this principle also, beef, mutton, and the coloured flesh of all animals owe their grateful odour when dressed. It enters sparingly into the composition of young and white meats, which are consequently deficient in savour. Osmazome does not exist to so great an extent in red coloured flesh, as in that which is dark; and the colour of the latter is ascribed to the increased quantity of this principle. These two classes, however, cannot be distinctly separated; they gradually merge into each other. The animals with red flesh, according to their rank as food, are the quadrupeds in common use,—the ox, the sheep, the hog, and the rabbit. Of the birds, there are the pheasant, the partridge, the pigeon, the duck, the goose, the wild duck, and other aquatic birds.

The animals with dark coloured flesh are, of the quadrupeds, the different species of deer, the hare. Of birds, the quail, the grouse, the woodcock, snipe, lark, &c.

Blood contains much fibrin, and is consequently very nourishing, though not nearly so much so as flesh; it was prohibited as an article of Diet by the Mosaic law, and is very little used for that purpose in civilised countries.

In arranging the different kinds of animal food according to their nutritive qualities, the flesh of quadrupeds, generally speaking, takes the first rank; next that of birds; then fish; and lastly oysters and other shell fish.

BEEF. Beef is almost the only kind of animal food in season throughout the year. Cooked in various ways, it constitutes one of the principal and most common articles of Diet among Europeans. It affords a strong degree of nourishment, and is well adapted for our climate, especially to those who use active exercise; but, being of a firmer texture, is not considered so easy of digestion as mutton, though equally nutritious. The flesh of a bullock about the middle age is much superior to that of one which has been worn out with labour, because in all old animals, besides the disadvantages of the greater density of the muscular

fibre, the fat is chiefly collected in layers on the outside of the muscles, whereas in young animals it is mixed with the flesh, giving it that marbled appearance which is always expected in good butcher meat. Cow beef is considered inferior in every respect to ox beef, and the flesh of the bull is seldom eaten in this country.

The "roast beef of old England" has been long renowned, and is certainly unequalled in other European countries. The following quotation from Dr. Thomas Coghan, who lived in the reign of Henry the Eighth, and is the oldest English writer on Diet, shows the estimation in which beef was held in his time. "Biefe," says this writer, many of whose observations are very judicious, "of all flesh is most usuall among Englishmen. I need not show how plentifull it is throughout this land, before all other countries, and how necessary it is both by sea for the vitailing of ships, and by land for good house keeping, in so much that no man of honour, or worship, can be said to have good provision for hospitality, unless there be good store of biefe in readinesse. And how well it doth agree with the nature of Englishmen the common consent of all our nation doth sufficiently prove. Yea, that it bringeth more strong nourishment than other meats, may plainly be perceived by the difference of strength in those that commonly feed on biefe, and them that are fed with other fine meats. Notwithstanding, *Galen* affirmeth, and other writers are of the same judgement, that biefe maketh grosse bloud and engendereth melancholy, especially if it be much eaten; and though the Salernian school reckoneth it among those ten sorts of meats, that ingender melancholy, and be unwholesome for sicke folkes, yet all these authors (in my opinion) have erred in that they make the biefe of all countries alike. For had they eaten of the biefe of England, or if they had dwelt in this our climate, which through coldness doth fortifie digestion, and therefore requires stronger nourishment, I suppose they would have judged otherwise. Yet do I not thinke it wholesome for sicke folks, but for those that be lustie and strong."

Beef tea, made stronger or weaker, according to circumstances, is much employed for the sick, where the state of the patient admits of animal Diet; and, taken along with bread, it is one of the best restoratives during convalescence, but should be used sparingly, on account of its stimulating properties. Dr. Kit-

chener, the best authority in such matters, has given the following receipt for making it :—“ Cut a pound of lean gravy meat into thin slices, put it into a quart and half a pint of cold water, set it over a gentle fire, where it will become gradually warm ; when the scum rises, let it continue simmering gently for about an hour, then strain through a fine sieve, or a napkin, let it stand ten minutes to settle, and then pour off the clear tea.”

MUTTON. Mutton in good condition has the proper tendency of fibre to render it easy of digestion ; it is not so savoury, nor so stimulating, as beef, but is well known to be very nourishing, and is, perhaps, more generally used than any other kind of animal food. The flesh of the *Wedder* is by far the most digestible, and is considered best about five years old. Ewe mutton is generally preferred about two years old, but is not so savoury or sweet. “ Mutton,” says Dr. Coghan, “ is commended of the most part of physitians, save *Galen*, who saith, that it maketh ill juice ; but how much he is deceived if he speaks generally of the mutton of all countries, experience proveth here in this realm ; for if it be young, and of a wether, it is right temperate meat, and maketh good juice, and therefore it is much used, both in sickness and in health. Yet it is not like good in all places in England. Nor the sheepe which beareth the finest wool is not the sweetest eating, nor the most tender.”

PORK. Pork is highly nutritive, and is less stimulating than beef ; but being the meat most mixed with fat, it remains long upon the stomach. Hence English labourers prefer pork and bacon, because, with this food, they are able to remain longer at work without being hungry. Pork, in its fresh state, and without much fat, if taken only occasionally, and in moderation, is sufficiently salutary to persons in health ; and those of delicate habits may sometimes use it sparingly, but to invalids it must be entirely interdicted. Pork, unless used very sparingly, is considered unwholesome in warm climates : if made a principal part of the daily diet, it is said to produce leprosy, and other diseases of the skin, and was probably prohibited on this account by the Mosaic law. The Mahometans look upon the flesh of the “ unclean animal” as an abomination, and in Spain it is not allowed by the police regulations to be sold during the summer months : the Chinese, on the contrary, prefer pork to every

other kind of animal food; and among the ancient Greeks it was much esteemed. Galen says, that of all food, pork is the best and most nourishing to people of robust constitutions who use much exercise, and in proof of this he adduces the experience of the athlète, or champions trained up for the Olympic games. "Suppose two champions," he says, "of the same strength, to use the same exercise, and feed on pork; if either of them shall change his Diet, and live on an equal quantity of any other sort of meat for but one day, he will immediately find himself weaken; and if several days, he will not only grow feeble, but meager also, for want of his proper sustenance."

HARE. The flesh of the hare, like dark coloured flesh in general, is stimulating, and, when young and fat, is delicate, and not difficult of digestion. Hares, however, differ much in quality, according to the places where they live; those that are bred in mountainous countries, from feeding on aromatic herbs, are richer in flavour, and much superior to those inhabiting moist and marshy places. The flesh of hares was much esteemed by the Romans. Martial says,

"*Inter quadrupedes gloria prima lepus.*"

The Jews and Mahometans, on the contrary, are prohibited by their religion from using the hare or rabbit as food. Hare, in whatever manner cooked, especially if made into soup along with the blood, is rich and stimulating; and therefore improper for invalids, unless in certain cases where it may be deemed necessary to administer food of this description. The back is the best part of the hare; in fact, in all wild animals the parts which have the least motion are the most tender and juicy.

RABBIT. The flesh of the rabbit is more tender and juicy than that of the hare; but remains longer on the stomach, and is not so nourishing. Wild rabbits are in every respect better than such as are domesticated. The rabbit, like the hare, is in better condition for the table in winter than in summer.

VENISON. The flesh of the *stag*, well known under the name of venison, is not so close grained as that of beef, or mutton; and when not too fat is, to a stomach in full vigour, perhaps the most digestible of all meat; but, like other kinds of game, though very nutritious, is more stimulating than mutton. The

fat is esteemed a great delicacy, and highly valued by the gourmand. The flesh of the *fallow deer* nearly resembles that of the stag, but is generally fatter, and has not the rich flavour of the wild stag of hilly countries. The *roebuck* is considered inferior to the fallow deer. The flesh of the *rein deer* is equal to that of the stag, and the milk, which is sweet and nourishing, constitute the principal food of the Laplanders. The *tongue*, when salted, is much esteemed, and is considered a great delicacy.

BIRDS. All kinds of wild birds have their flesh of a looser texture than those that are domesticated, and are therefore easier of digestion, though they are for the most part more stimulating.

Partridge and *pigeon* are not detained so long in the stomach as *pheasant*; and *grouse*, if kept sufficiently long, ranks, with respect to digestibility, probably next to venison.

The common or domestic fowl, although rather slow of digestion, is very mild, and well suited for invalids. *Chicken* is generally the first kind of animal food allowed to the convalescent from fever, and other acute diseases, because it has less tendency to stimulate the general system than the flesh of other animals. All white meats, though not so nutritive, are less stimulating than red or dark-coloured flesh; and this fact should never be forgotten in regulating the diet of invalids. For example, a patient recovering from inflammation of the lungs, or any other inflammatory disease, though his appetite and the state of his stomach might allow him to digest a beef steak in shorter time than the wing of a fowl, yet, from the highly nutritive and exciting nature of the former, it could not be indulged in without a great risk of bringing back the inflammation, and endangering the life of the patient. Many persons while aware of this have, nevertheless, allowed their appetite to overcome their better judgment, and have suffered severely for their folly.

Turkey yields a similar but stronger nourishment than the barn-yard fowl or capon, but partridge and most kinds of game are more digestible.

Geese and *ducks*, from the fat and oily nature of their flesh, are difficult of digestion, and are the most oppressive kinds of poultry. Wild ducks, though very savoury, are equally indigestible.

All kinds of animal food cured or prepared with salt, vinegar, or spices, are much more indigestible and heating than in their fresh state, and not so nutritious or wholesome. Both fish and flesh when dried or smoked, having lost their juices by evaporation, become hard, compact, and their digestion requires much greater labour from the stomach than any other kind of food. With many people, however, a small portion of *ham*, *tongue*, or *bacon** at breakfast, by stimulating the stomach promotes digestion ; with others, again, food of this description remains long on the stomach, and invariably produces irritation. It has often occurred that persons accustomed to the use of the above mentioned articles of Diet, or buttered toast or muffin at breakfast, have been irritable, oppressed, and uncomfortable for some hours afterwards, without being aware of the cause ; and after suffering for a long time from these uneasy sensations, have at length succeeded in getting rid of them entirely, by discontinuing the use of meat, and taking only plain or toasted bread with their tea or coffee.

GELATINOUS FOOD. Gelatin exists in the flesh of all the domestic quadrupeds used as food, and constitutes the greater part of young animals ; the younger they are the more of this substance they contain, and the less digestible and nutritious is their flesh. Gelatinous substances are not so nutritious nor so easy of digestion, as those in which fibrin and albumen predominate. The gelatin contained in the flesh of the sucking pig, in that of birds before they begin to fly, and in all very young animals, present a glairy or jelly like appearance ; in this state it is neither nutritious nor easy of digestion, and should therefore be avoided by the invalid. The flesh of the calf, of the lamb, and the pig, or that of other young animals, if fed for some time, is firmer, less viscid, and contains more perfect gelatin ; hence, it is better adapted for food, but is still far

** "Bacon," says Dr. Coghan, "is in nowise commended as wholesome, especially for the studious, or such as have feeble stomachs. But for labouring men it is convenient, according to the Latin proverb, *Crassa crassis convenient* ; and indeed in such kind of men it forceth not much how wholesome meat be, so it fill the belly, and keep strength, for, as the poet Virgil writith, '*Labor improbus vincit omnia.*'" Whether the doctor was a *bon vivant* or not we cannot say ; but he takes care to inform us that 'a gammon of bacon well dressed is a good shoeing horn to pull down a cup of wine.'

from being so nutritious or easy of digestion as the flesh of the same animals in a state of maturity.

The diminished proportion of fibrin, and the increase of gelatin in the younger animals, are not the only circumstances that distinguish them from those which have attained their full growth ; the flesh of the former does not appear to contain, or at least is only provided with a very small proportion of the stimulating principle already alluded to, osmazome, which gives the rich flavour to red and dark coloured meats ; and which renders them so much more heating than veal, lamb, poultry, and the various kinds of white meat.

A committee lately appointed by the French Academy of Sciences, to inquire into the nutritive properties of gelatin, came to the conclusion that the gelatinous substance extracted from bones is incapable of nourishing animals, and that whether employed alone or mixed with other substances it cannot be substituted for flesh.

VEAL contains a greater proportion of gelatin, and is much more difficult of digestion, than lamb. In order to have good veal, the calf should be fed on the mother's milk until it is six weeks old ; the practice of feeding calves on milk adulterated with chalk, or repeatedly bleeding them with the intention of making the meat appear white, cannot be too strongly reprobated. In consequence of these and similar improper methods, frequently adopted in the rearing and managing of calves and lambs, the flesh is deprived of its due proportion of fibrin, and its alimentary properties are greatly depraved.

LAMB. Although it is customary to eat this meat when very young, yet it is not so wholesome as when the lamb has been allowed to suck until it is six months old ; the flesh is then of a firmer consistence, fatter, more nutritive, and in every respect superior to that of the lamb killed at two months old.

Chicken, the young rabbit, pheasant, and nearly all the young animals used at table, in which the flesh is soft and tender, without being viscid, or glairy, are considered the most digestible, and the wholesomest kind of gelatinous food.

ALBUMINOUS FOOD. Albumen is found in great abundance in the blood, and in various parts of animals ; the white of egg is composed of this substance in a pure state : it becomes solid

by the application of heat, and is thus readily distinguished from other substances. Albumen is more or less easy of digestion, according to the state in which it is used ; when slightly coagulated, it is easily digested ; not coagulated, it is less so ; and if taken in a solid state, it is very indigestible. But, although the digestibility of the albuminous substances commonly employed as aliment is greatly modified according to the degree of heat and mode of cooking, yet they are considered very nutritious, and leave little excrementitious matter. The articles of food in which albumen predominates, are eggs, oysters, mussels, cockles ; the brain, liver, and sweet bread of various mammiferous animals.

Eggs. Eggs are composed almost entirely of albumen ; the yolk, besides this substance, contains gelatin, oil, and water, in combination with yellow colouring matter. There is also a little sulphur mixed with the albumen ; it is to this circumstance that silver spoons used in eating eggs are stained of a dark colour ; and the strong smell of sulphuretted hydrogen, which eggs exhale when in a state of putrefaction, is also derived from the same principle. Raw eggs pass quickly out of the stomach, and produce a gently laxative effect ; when taken in this state they are said to be serviceable in jaundice and obstructions of the liver ; when boiled in the usual manner they afford a mild strengthening aliment, not difficult of digestion. Hard boiled eggs remain long on the stomach, and are apt to constipate the bowels ; they are rendered easier of digestion when used with vinegar as a condiment. The eggs of the granivorous fowls are considered the best ; those of the common hen and the guinea hen are most esteemed. The eggs of ducks, geese, and of all the water fowls, contain a greater proportion of oil, and are more strongly flavoured ; they are only suited for powerful stomachs.

An egg, boiled until the greater part of the white is slightly coagulated, without depriving the yolk of its fluidity, and taken with a due proportion of bread, is an excellent article of Diet for a child, or a person in a state of convalescence ; but when the stomach is deranged, eggs, in whatever state, are apt to increase the disorder.

OYSTERS are very nutritive, easily digested, and agree with the stomachs of most people ; they are well adapted for con-

valescents, and may be taken even by those affected with chronic disorders, unless where it is necessary to reduce the patient. They rarely disorder the stomach, even when taken in large quantities, and are often resorted to by persons affected with indigestion, being found less distressing to the stomach than any other kind of food. Boiling coagulates the albumen of which oysters are chiefly composed, thus rendering them harder and less easy of digestion ; not nearly so many can be eaten when boiled as in the raw state. Oysters cast their spawn, which the dredgers call *spat*, in the month of May, after which they are sickly and unfit for food ; but in July they recover, and are brought to the London market in August, when they are considered in perfection. The Milton oysters, being the fattest and whitest, are much esteemed ; but those from Colchester, Pyfleet, and Milford, are considered the best.

MUSSELS are of a more solid texture than oysters, and are not so easily digested. The eruption on the skin called nettle-rash (see page 483), is said to occur more frequently after eating mussels than any other kind of shell fish. COCKLES, PRAWNS, and SHRIMPS are more wholesome, but should only be slightly boiled. LOBSTERS and CRABS are certainly nutritive, but they remain long, even on the strongest stomachs ; their digestion, however, is greatly aided by the use of vinegar as a condiment.

The BRAIN of the sheep, and the SWEETBREAD of the calf, although they contain a large proportion of albumen, combined with fatty or oily matter, yet they preserve their softness ; when cooked, are easily digested, and very nourishing. The LIVER is also a strengthening food ; but is much harder, and consequently more difficult of digestion.

FISH. Fish belong to the fibrous, gelatinous, and albuminous classes of food ; in general they are less nutritive than land animals, and afford more nourishment than vegetables ; from their great variety they present every degree of digestibility. Fishes may be divided into two classes, the fat or oily, and those without fat ; but these classes cannot of course be distinctly separated.

In the *first class* may be placed the herring, mackarel, salmon, eel, the trout, and carp in certain seasons, and to these we may add the turtle ; all of which, and indeed every kind of oily or

fat fish are nutritive, but more or less difficult of digestion, and consequently improper for valetudinarians. To the *second class* belong the whiting, haddock, cod, ling, turbot, sole, flounder, and the trout and carp when not fat. All fish of this description, if plainly cooked, and taken without much butter, are more congenial to the stomach, and more easily converted into wholesome nourishment than the former.

WHITING. The whiting is very tender and delicate ; it possesses these qualities in a greater degree than any other fish which our coasts afford ; hence it has been called the "chicken of the sea." Whiting is not very nutritive, but it produces no stimulating action on the system ; and not being oily or viscid is easily digested, and therefore well suited to delicate stomachs, and to patients labouring under various complaints, in which the daily use of even the least exciting meat might prove injurious. Physicians know the advantage of varying the diet of invalids, and of those convalescent from acute diseases ; and hence, when the use of the mildest animal food is admissible, they frequently order whiting and chicken to be taken at dinner on alternate days, followed by a little sago pudding, or some other mild article of farinaceous aliment.

HADDOCK. If we compare whiting, in as far as regards its nutritive qualities, to chicken, we may also compare haddock to the full grown barn yard fowl ; and it is, perhaps, equally digestible, though not so nutritious.

COD. Cod contains more gelatinous matter, and is rather richer and heavier than haddock ; but is an excellent and wholesome fish. The glutinous parts about the head of the cod do not agree with the delicate stomach, and should be avoided by invalids.

LING. Ling resembles the cod, but is altogether an inferior fish, whether in its fresh state or salted.

TURBOT. This is a very wholesome fish, and deservedly much esteemed ; but the skin, like the glutinous parts of the cod, is only adapted to the vigorous stomach.

SOLE. Sole, though one of our best fishes, is not so agreeable to the stomachs of most people, and is not so easily digested as turbot ; unless perfectly fresh, it is apt to disagree

with those whose digestive powers are weak. Nearly all fish, if good and fresh, after being cooked should appear opaque and flaky ; it is much inferior in quality, or out of season, if it present a bluish colour, and is at the same time slightly transparent, and deficient in firmness.

SALMON. Salmon is a more nutritive fish than any of the preceding, and is highly prized when in season ; but being rich and oily, is by no means easily digested, and requires condiments, the best of which is salt and Chili vinegar. The thinnest part of the fish is the fattest. The quantity of lobster, shrimp, or anchovy sauce generally taken with salmon, is often more indigestible than the fish itself ; cod, turbot, and several varieties of fish, otherwise easy of digestion, are generally rendered more or less hostile to the stomach, from the same cause. In some parts of the Highlands of Scotland, and in Wales, salmon is cleaned and boiled as soon as caught, and served up cold ; in this state it is comparatively easy of digestion, when taken with vinegar and pepper. Salmon is less oppressive to the stomach, and more wholesome, when used in its freshest state ; and, as in the greater part of fish when in perfection, there is a deposition of a curdy-looking substance between its layers or flakes. Cold, and the process called crimping, have the effect of preserving this curdy matter. "I conclude," says Sir Humphrey Davy, in his "*Salmonia*," "that the fat of the salmon between the flakes of the muscles is mixed with much albumen and gelatin, and is extremely liable to decompose, and by keeping it cool the temperature is retarded ; and by boiling in salt and water, which is of a higher temperature than that of common boiling water, the albumen is coagulated, and the curdiness preserved. The crimping, by preventing the irritability of the fibre from being gradually exhausted, seems to preserve it so hard and fresh that it breaks under the teeth ; and a fresh fish, not crimped, is generally tough." By crimping, fish is rendered firmer and keeps longer. The late Sir Anthony Carlisle, who made some inquiries into the effect produced by this process, observes, that " Whenever the rigid contractions of death have not taken place, this process may be practised with success. The sea fish destined for crimping are usually struck on the head when caught, which, it is said, protracts the term of this

capability ; and the muscles which retain this property longest, are about the head. Many transverse sections of the muscles being made, and the fish immersed in cold water, the contractions called crimping take place in about five minutes ; but if the fish be large, it often requires thirty minutes to complete the process."

SALMON TROUT. This fish is not so heating as salmon, and, being less rich and oily, is not so nutritious, but is more under the command of the stomach. All the varieties of trout, though they contain more or less oil, are easier of digestion than salmon ; but, like the latter, they uniformly disagree with some persons whose stomachs are not particularly feeble.

The great proportion of fat or oil contained in the **HERRING**, the **MACKAREL**, and more especially in the **EEL**, imparts a degree of richness that renders them very palatable, but which few stomachs, unless in perfect vigour, are able to contend with. In fact, the oily matter contained in fish, is much more difficult of digestion than the fat of meat. The green fat of the turtle, however, when properly prepared, and not rendered empyreumatic in cooking, is for the most part congenial even to the most delicate stomach ; and is very nutritious, and easy of digestion. Besides these good qualities, turtle soup is proverbially savoury ; and we need not therefore be surprised that it constitutes a prominent dish at our civic feasts ; indeed, so much is it esteemed in this country, that if an Englishman were to sell his birthright for a mess of potage, he would probably stipulate that it should appear in the form of turtle soup. In the West Indies we have sometimes found turtle soup moderately seasoned to agree better with patients labouring under chronic dysentery, than other kinds of food.

Perch and many of the fresh water fish are more digestible than the generality of sea fish ; and those caught in rivers and brooks, than others found in stagnant waters. Eels which inhabit ponds and stagnant pools are tough, and not nearly so digestible and wholesome as the silver eel of rapid streams ; and the latter soon becomes inferior in every respect, if placed in marshes or dark muddy waters. Trout and mullet are changed by the quality of the water ; those, for example, caught near chalybeate springs, are dark coloured and unwholesome ; while

those found lower down in the same stream, possess all the characteristic delicacy of flavour for which these fish are so much esteemed.

The above remarks will be sufficient to allow the invalid to judge of the qualities of fish appropriate to the delicate stomach, and will show him the necessity of abstaining from the more oily varieties, and such as are not quite fresh ; rigidity and firmness of texture are the best indications that fish has not begun to spoil.

Fish is contra indicated in scrofulous cases, and would be improper when we are desirous of giving tone and vigour to the system. That fish affords less nutriment than flesh is well known to jockeys, who are fed on it at Newmarket and other places, in order to reduce them to the requisite weight.

The best mode of cooking fish for invalids is simply boiling them, or, if perfectly fresh, they may be broiled ; but as we have already mentioned, frying is the worst method wherever the stomach is out of order.

FAT OR OILY FOOD. This is the least digestible of all the classes of aliment. If used in considerable quantity for any length of time, it is deposited in the cellular structure which binds the muscles together, and consequently augments the bulk of the body without enlarging or increasing the strength of the muscular fibres. Some writers on the subject, however, hold a different opinion. Mr. Hewson says, "That nature makes use of the form of oil in preference to any other, for the nutritious substance of the body, from its being the least liable to putrefaction ; and from its containing the greatest quantity of nourishment in the least bulk. This circumstance (he adds) was clearly proved by my valuable friend, the late Dr. Stark, who, in a course of experiments made, by weighing himself after living for some time on different kinds of food, discovered that a less quantity of suet was sufficient to make up for the waste of his body, than of any other sort of ordinary food ; and that, when compared with the lean part of meat, its nutritive power was at least as three to one." Oil or fat, if taken in moderate quantity, and well mixed with other food, is not generally indigestible ; oil, for example, is commonly understood to render salad easier of digestion ; and appears to have the effect of

preventing raw vegetable substances from fermenting in the stomach, and causing flatulence.

Young people usually have a natural dislike to fat food, and it almost invariably disagrees with them ; hence, the practice which was adopted at some schools, with not the most laudable object in view, of urging children to eat the fat of mutton, pork, &c., and bacon, cannot be too strongly condemned. The antipathy which the stomach, both of the young and the aged have to fatty substances, demonstrates the impropriety of using them in their diet. A very distinguished American physician, Dr. Beaumont, ascertained that meat containing much fat, and all oily substances, caused a flow of bile into the stomach ; and it is well known that persons of a bilious habit are for the most part unable to digest pork, duck, goose, and other fat meats ; when in a liquid state, as in fat broths or gravy, it is still more objectionable. Oily and fat substances, if taken while hot, are less digestible and more apt to disorder the stomach than if eaten when cold.

OLIVE OIL. The finest olive oil of Provence and Tuscany seldom offends the stomach ; and in those countries is much used in cooking. Before reaching England it always becomes more or less rancid, and as far as we have had opportunities of observing, never has the delicious flavour of the pure oil used at table in the countries which yield the olive. This oil, when in perfection, is certainly more easily digested than butter, and is tolerated by the delicate stomach even when unaccustomed to it, where the mischievous effects of melted butter would not fail to be experienced. We have repeatedly heard this remark made by invalids both in the south of France and Italy.

Butter, in the operation of melting, acquires properties which almost invariably render it injurious to persons subject to disorders of the digestive organs.

ALMONDS, WALNUTS, FILBERTS, &c., are chiefly composed of fecula and oil ; they are proverbially indigestible, and are even too much, sometimes for the stomachs of the most active schoolboys.

MILK, OR CASEOUS FOOD. The nutritive properties of milk hold a middle rank between vegetable and animal food ; it is the natural aliment of the young of all the mammi-

ferous animals, and is the only food which nature presents to us in a fluid state. Milk is strengthening, nutritive, and easily assimilated; it is mild, soothing, and instead of exciting the system and quickening the pulse, like beef-tea or other preparations of animal food, has rather a tendency to produce languor and disinclination for exercise. The milk of different animals differs in its composition and nourishing qualities, and it varies according to the food on which the animal has been fed.

Cow's MILK. Cow's milk, being the most plentifully furnished, is of the greatest importance as an article of diet. It is composed of cream, curd, and whey; the proportion of the solid and watery parts are,

| | | | | |
|---------------|---|---|---|------|
| Butter | - | - | - | 4. 5 |
| Cheesy matter | - | - | - | 3. 5 |
| Whey | - | - | - | 92. |
| | | | | 100. |

Cow's milk, in its pure state, is only adapted for strong stomachs; but in cases where we wish to supply the system quickly with much nutritive matter in small bulk, milk, which in this respect resembles eggs, is one of the best kinds of aliment which can be used. It should not be taken by persons labouring under indigestion, nor by those with weak stomachs; under such circumstances it is very apt to turn acid on the stomach. To prevent this effect some medical men recommend it to be taken with a small quantity of *lime water*, and this often proves a useful addition. In all acute diseases, milk, in whatever form, should be prohibited, and, if taken undiluted, it is not well suited for the convalescent. In certain chronic diseases, such as spitting of blood, the early stages of consumption, the scrofulous affections of children, certain disorders of the urinary organs, chronic dysentery, and various spasmodic and nervous diseases, the most appropriate diet, in the majority of cases, is milk prepared with bread, rice, arrow-root, and other farinaceous substances.

The albuminous part of milk is not coagulated into a mass by boiling like the white of an egg; this is owing to the greater quantity of water with which it is united. By the action of heat a thin film rises to the surface, which, if skimmed off, is soon replaced by another, and by continuing to skim from

time to time, the whole of the albumen may be thus removed. By this process milk is rendered less nutritive but more digestible, and is, therefore, better adapted to weak stomachs than if taken in a pure state.

ASSES' MILK is not so rich in cream and cheesy matter as that of the cow or goat, but contains more sugar, and is much easier of digestion, being eminently adapted to patients whose digestive organs are in a debilitated condition. In many instances it proves gently laxative, and in this respect differs from that of the cow, which, in most cases, has rather an opposite tendency. To persons threatened with consumption, and in the early stages of that disease, more especially when associated with a deranged state of the stomach and bowels, asses' milk, when it can be procured in sufficient quantity, is well known to be of the greatest service.

GOAT'S MILK. The milk of the goat is richer and stronger than that of the cow, but does not contain so much sugar. It possesses some aromatic principle, derived from the herbage on which the goat feeds; and this renders it easier of digestion to many stomachs than cow's milk.

HUMAN MILK. Woman's milk is said to be the weakest and least nutritive of all, but is more easily digested, and contains a greater proportion of sugar. Hence, when it is found necessary to rear a child with the spoon, the milk of the cow should be freely diluted with water, and sweetened with sugar, or it may be boiled and carefully skimmed.

CURD. The curd or albuminous part of milk is separated from the whey by acid, alcohol, and other substances, but the best coagulating agent is the gastric juice. "The infusion of a piece of calf's stomach (*rennet*), not larger than a half-crown, will coagulate a quantity of milk sufficient for making a cheese of sixty pounds' weight, although the quantity of coagulating matter cannot in this case exceed a few grains." The ancients made use of the juice or sap of the fig to curdle milk.

The figs' press'd juice, infus'd in cream,
To curds coagulate the liquid stream.

Pope's Homer.

Milk coagulates upon all stomachs, and the curd thus formed

is soft and loose; but when prepared out of the body, it often disagrees with the digestive organs, and in many persons invariably produces the effect of oppressing the stomach.

WHEY. When milk is coagulated by the addition of a small piece of rennet, the whey, when separated from the curd, contains some butter and curd in solution, it also holds in solution nearly all the sugar of the milk, and is, therefore, more liable than milk to ferment in weak stomachs, and produce flatulence.* Whey is not so nutritious as milk, but affords an excellent demulcent drink in consumption, coughs, jaundice, dysentery, and other diseases, either given alone or mixed with mineral waters.

CREAM. This is a compound substance, consisting, according to Berzelius, of

| | | | | |
|--------|---|---|---|------------|
| Butter | - | - | - | 4. 5 parts |
| Cheese | - | - | - | 3. 5 |
| Whey | - | - | - | 92. — |
| | | | | 100. |

Cream is more easily digested than butter, and when mixed with tea or coffee renders these beverages more palatable, and has an excellent effect in correcting their stimulating principle.

BUTTER. Butter, like other animal oils, unless very sparingly employed, is not congenial to weak or delicate stomachs, or to persons of bilious temperament; but taken in moderation, when fresh and good, it agrees with any age or constitution. When rendered empyreumatic by the action of heat, butter is very oppressive to the stomach, and often produces heartburn. Persons of delicate constitution, or those affected with indigestion, should, therefore, avoid eating buttered toast, muffins, crumpets, &c., and all articles of Diet fried with butter. The best butter in England is made in Essex, and is called Epping butter.

CHEESE. Cheese is the curd or albuminous part of milk separated from the whey, and subsequently salted, compressed into a mass with a portion of butter which cannot be separated from it, and then partly dried. Cheese constitutes a part of the daily Diet of a great proportion of the human race, and proves a

* The whey from mare's milk contains a greater quantity of sugar than that from any other animal; on this account it readily ferments, and furnishes a strong spirit by distillation, called *couniss*, which is much used by the Kalmouks and some other Tartar tribes.

strong and nourishing food to those who can digest it, but is only adapted to people of robust constitutions and to those who take much exercise; it is almost invariably hurtful to persons whose digestive organs are weak. The earliest *athletæ*, or champions, were fed with bread and cheese when training for the public games, this aliment having been considered both the most strengthening and the most nourishing.

Toasted cheese is still more objectionable, and is particularly injurious to the delicate stomach.

FARINACEOUS FOOD. The base of all the substances of this class is a distinct principle, possessed of peculiar properties, named *fecula* or starch. This is the most widely diffused principle of the vegetable kingdom, and is met with in various parts of plants, in the seeds, roots, pith, or in the leaves; and, from the extent of its diffusion over the earth, and its effects upon the human body, appears intended by nature to be the chief food of mankind. Fecula, however, is never used in its pure state; it is always associated with different substances, such as gluten, sugar, albumen, mucilage, &c.

The elementary principles of fecula and gum are the same, yet they differ widely in their chemical properties and nutritive qualities. This circumstance affords a striking illustration of the influence of the formation of bodies upon their chemical and physiological properties. It has been ascertained by the French chemists, that fecula exists in the various farinaceous substances in an organised state. It consists of numerous globules or grains, more or less round or elongated, each formed of a succession of concentric layers, one within another like the coats of an onion, having the same elementary composition, but varying in their physical qualities; the external coats being endowed with a much greater power of resisting the action of the agents capable of modifying the fecula. Hence, the stomach has very little influence in changing the formation of fecula in its organised condition, and it cannot be considered as actually nutritive to man until it has been submitted to the action of heat. Whatever mode of cookery is adopted, the heat produces the effect of bursting all the grains, and thus renders fecula one of the most easily digested substances, although completely useless as an article of Diet until this physical change be effected.

WHEAT. The most important of all the farinaceous substances is wheat, which, besides *secula*, contains a large quantity of gluten, a distinct vegetable principle well known to the chemist; and it is to this circumstance, that of all the grains wheat is the best adapted for making bread.* The flour or meal of other farinaceous seeds does not contain a sufficient quantity of gluten to allow it to undergo what has been called the *panary fermentation*, and cannot, therefore, be made into loaves like the flour of the wheat. On the other hand, a greater quantity of gluten is contained in wheaten flour than is necessary for itself, and, therefore, we sometimes mix it with the meal of barley, peas, beans, &c., potatoes, and other substances, in order to make them into bread.

BREAD. The chemical changes which flour undergoes, during the process of making bread, are not easily understood; for, when the panary fermentation is completed, its properties are so altered that we cannot obtain from it either *secula* or gluten. Bread, therefore, differs widely from the flour of which it is composed, and, in fact, may be considered as a new substance. It is easier of digestion than any other preparation of flour, and mixes more readily with water, but is considered less nutritive. Newly baked bread, however, swells in the stomach, and is far from being easily digested. Indeed, the process of fermentation does not appear to be completed until the bread is cold; for new bread differs from old not only in its effects, but in its smell and taste. "The best bread," says Dr. Coghan, "is made of pure flour of good wheat, sufficiently leavened, somewhat salted, well moulded, well baked, neither too new nor too old: that is to say, that it be at least a day and a night old, and not past four or five days old, except the loaves be very great." Besides the nutritive qualities of bread, it prevents the bad effects which would result from the use of too much animal diet, rich soup, and other concentrated food; and, also, serves to divide and give our aliment a proper bulk and consistence. It may be allowed to the stomach of the weakest

* It has been ascertained by M. Magendie that animals do not live for any length of time when fed on gelatin, fibrin, or albumen singly; in general, he says, they cause such disgust that the animals prefer dying rather than taking them. Gluten, or the adhesive part of wheat, will, on the contrary, nourish an animal well and for a long time.

patient, neither stimulates nor relaxes the system, and is justly called the staff of life.

In this country we use three different sorts of bread, the white, the wheaten, and the household. Fine white bread is made of flour only; wheaten bread of flour, mixed with the finer bran; and household bread of the whole substance of the grain, including the coarser bran. It is generally believed that fine white bread is the best, and, no doubt, to most people it is more agreeable to the palate than any other kind of bread, being entirely deprived of the bran; but it is not so nourishing. M. Edwards, of Paris, has shown, by various experiments, that the common coarse bread (*pain de munition*), which contains a considerable quantity of bran, is much more nutritious than white bread, so much so that dogs fed on the former remained in health, whereas those fed on white bread gradually wasted away, and died. He has proved, he states, that this difference arises entirely from the absence of the bran. From the mechanical action of the particles of bran upon the lining membrane of the bowels, the household bread acts on many persons as a gentle laxative; the white bread, on the contrary, has rather a tendency to constipate the bowels, in consequence of the astringent action of the starch which it contains not being counteracted by the bran.

Various articles are used in the adulteration of bread; the most innocent of them in potatoes. Alum is much employed to give whiteness to bread, and to prevent the loaves from sticking to each other in the oven. It is supposed that the smallest quantity that can be used for these purposes is thirty-six grains to the quartern loaf. The daily introduction of small quantities of alum into the stomach must interfere in some degree with the exercise of its functions, and to those troubled with indigestion it must prove highly injurious. Persons affected with stomach complaints should, therefore, be careful to get their bread made without alum. The carbonate of ammonia (sal volatile) is extensively used instead of barm in making the finer kinds of bread; but this salt does no harm, and is in fact rather advantageous than otherwise, because it is completely volatilised in the oven without imparting either taste or smell to the bread.

Many preparations of flour, though more nutritive than bread, are not so wholesome. All kinds of puddings, dumplings, pan-

cakes, are highly indigestible, and pastry, Dr. Paris declares, is an abomination. "I verily believe," says this author, "that one-half, at least, of the cases of indigestion which occur after dinner-parties, may be traced to this cause." The most easily digested pudding is made with bread, or biscuit, and boiled flour; batter-pudding is more difficult of digestion, and suet-pudding is considered the most unwholesome of all the "pudding race."

BISCUIT. This is the best kind of unleavened bread, and is, no doubt, that which was first used in the early ages of the world. It is formed of a mixture of flour and water, kneaded into a tough paste, and made thin in order that it may be completely dried in the oven; it is then divided into round pieces of the requisite size, pierced with an instrument for the purpose, sprinkled with flour, and then baked. Biscuits not being fermented, are, consequently, not so much disposed to become acid on the stomach; hence they may be advantageously used where common bread does not agree with the digestive organs. They are, also, for the same reason, employed in the diet of children. We need scarcely mention, that biscuit made with butter should not be used by dyspeptic patients.

OATS. Oatmeal, prepared in various ways, constitutes one of the principal articles of diet in Scotland, and in some parts of England, where it is found both wholesome and nutritious; it is, however, inferior to wheaten flour in nutritive qualities.* Oats contain a considerable proportion of sugar, and on this account cakes and other preparations of oatmeal are apt to run into fermentation in the stomach; they are also more heating to the system than either wheat or barley. "I have been informed," observes Sir Humphry Davy, "by Sir Joseph Banks, that the Derbyshire miners in winter prefer oat-cakes to wheaten bread,

* The old English author, Coghan, who appears to have been the Dr. Paris of his day,—we quote from the fourth edition of his work, says, "Galen affirmeth that oates are the food of horses, not of men—*jumentorum alimentum non hominum*—whose opinion in that point must be referred to the countrey where hee lived; for if he had lived in England, especially in Lankashire, Cheshire, Cumberland, Westmerland, or Cornwale, hee would have said that oates had been meat for men. For in these parts they are not onely provender for horses, but they make malt of them, and thereof good ale, though not so strong as of barley malt. Also of oates they make bread, some in cakes, thicker or thinner, as the use is; some in broad loaves which they call janock's, of which kinde of bread I have this experience, that it is light of digestion, but something windie; while it is new, it is

finding that this kind of nourishment enables them to support their strength and perform their labour better. In summer, they say, oat-cake heats them, and they then consume the finest wheaten bread they can procure. Even the skin of the kernel of oats probably has a nourishing power, and is rendered partly soluble in the stomach with the starch and gluten. In most countries of Europe, except Britain, and in Arabia, horses are fed with barley mixed with chopped straw; and the chopped straw seems to act the same part as the husk of the oat." That the skins or husks of oats contain wholesome nutriment there can be no doubt, for if infused in hot water, and the liquor be kept a day or two until it ferment, it will yield, by boiling, an article of diet called in Scotland *sooins*, or *sowins* (see page 608). This is a light and excellent dish, and no better food can be given to convalescents, particularly to those recovering from acute diseases. *Gruel*, made from oatmeal, or from oats deprived of their husks (*grits*), is also one of the best farinaceous preparations that can be used in the sick chamber. The following are Dr. Kitchener's directions for making it:—" Ask those who are to eat it if they like it thick or thin; if the latter, mix well together by degrees, in a pint *one* tablespoonful of oatmeal with three of cold water; if the former, use *two* spoonfuls; have ready in a stewpan a pint of boiling water or milk, pour this by degrees to the oatmeal you have mixed, return it into the stewpan, set it on the fire, and let it boil for five minutes, stirring it all the time to prevent the oatmeal from burning at the bottom of the stewpan, skim and strain it through a hair sieve."

RICE. Rice contains about eighty-five parts of starch in the hundred, and having no stimulating matter in it to quicken di-

meetly pleasant, but after a few dayes it waxeth drie and unsavorie; it is not very agreeable for such as have not been brought up therewith; for education both in diet and all things else, is of great force to cause liking or misliking. In Lancashire, as I have seene, they doe not onely make bread and drinke of oates, but also divers sorts of meats. For of the greats or groats, as they call them, that is to say of oates first dried, and after lightly shaled, being boiled in water with salt, they make a kind of meat which they called water pottage, and of the same boiled in whey they make whey pottage, and in ale, ale pottage; meats very wholesome and temperate, and light of digestion; and if any man be desirous to have a taste of them, let him use the advise of some Lankashire woman."

gestion, remains longer on the stomachs of some persons than other farinaceous substances. In India, and other eastern countries, where it constitutes the principal food of the inhabitants, it is usually taken with curry powder, peppers, and other stimulating condiments, in order to assist digestion. Mixed with other food it is wholesome and well adapted for delicate stomachs. Rice is digested without leaving scarcely any excrementitious matter, and this circumstance has probably given rise to the popular, though erroneous belief, that it has a constipating tendency. Rice water is an excellent demulcent drink when there is irritation of the bowels, dysentery, or diarrhoea. Ground rice and milk, flavoured with orange peel and sweetened, is a valuable article of diet during convalescence. Some of the French authors strongly recommend rice diet (*régime du riz*), for those affected with red gravel.

BARLEY. Barley contains a large proportion of starch, and much saccharine matter; the latter renders it well adapted for distillation; hence in this country it is chiefly used to make malt for the purpose of brewing and distilling. Dr. Coghan quaintly remarks, that "Though barley, as Galen saith, is of a cooling nature, yet it maketh such hot drinke that it setteth men often-times in a furie."

Barley in its nutritive qualities ranks next to wheat, and, according to ancient authors, constituted a great part of the food of mankind in the early ages. *Barley bread* is now little used in this country, but the meal is occasionally employed in Scotland to make porridge, which is a light food easily digested by invalids, and does not possess any of the heating properties which are attributed to oatmeal. *Pot barley* is the term given to this grain when deprived of the outer skin or husk. *Pearl barley* is the small kernel which remains after the husk and part of the grain have been removed. Both these preparations are used as articles of Diet. In Scotland, *barley broth* is a favourite dish among all ranks of society, and in the middle classes is considered almost indispensable at every family dinner.

Barley water has been employed, and much esteemed as a drink for the sick, from the time of Hippocrates downwards. The subjoined receipts by Dr. Kitchener, for preparing this drink, will be acceptable to those who have not the "Cook's Oracle"

to refer to. "Take a couple of ounces of pearl barley, wash it clean with cold water, put it into half a pint of boiling water, and let it boil for five minutes; pour off this water, and add to it two quarts of boiling water; boil it to two pints, and strain it.

"The above is simple barley water; to a quart of this is frequently added two ounces of figs sliced; the same of raisins stoned; half an ounce of liquorice sliced and bruised; and a pint of water. Boil till it is reduced to a quart, and strain. These drinks are intended to assuage thirst in ardent fevers, and inflammatory disorders, for which plenty of mild diluting liquor is one of the principal remedies, and if not suggested by the medical attendant, is frequently demanded by honest instinct, in terms too plain to be misunderstood. The stomach sympathises with every fibre of the human frame, and no part of it can be distressed without in some degree offending the stomach; therefore it is of the utmost importance to soothe this grand organ, by rendering everything we offer to it as elegant and agreeable as the nature of the case will admit of. The barley drink prepared according to the second receipt, will be received with pleasure by the most delicate stomach."

RYE. Rye flour contains a greater quantity of gluten than any other kind of flour except that of wheat, and also a considerable proportion of mucilage; when well kneaded it ferments, and partially rises; the bread is of a brown colour and not disagreeable to the taste, but is rather slow of digestion; it is also apt to turn acid on the stomach, and to relax the bowels of those unaccustomed to its use. On account of this latter property, bread made of wheaten and rye flour is found very serviceable to persons who are subject to constipation of the bowels. Rye bread is much used in the more northern countries of Europe; but in England we only use rye flour in making what is commonly called *brown bread*, which contains wheaten flour in various proportions.

This grain yields a black, morbid excrescence, curved like the spur of a fowl, called *ergot of rye*, which is often of the greatest service in the hands of the skilful accoucheur.

POTATOES. Potatoes contain a large proportion of starch, but no gluten; they improve in quality, becoming more farinaceous or mealy from the time they are taken out of the earth until

about the middle of December; from that time they gradually get more waxy, their nutritive qualities diminish, and they become less easy of digestion. The soluble nutritive matter contained in the potatoe is not nearly so great in the same bulk as in any of the grains. It has been computed that 2 lbs. of wheat contain as much nourishment as 7 lbs. of potatoes. But though this root is in every respect inferior to wheat, it cannot be called unwholesome food, for where is there a stronger or more hardy people than the Irish peasantry, who derive their principal sustenance from the potatoe.

Potatoes are easy of digestion only when mealy; those which we have seen at table in different countries on the continent of Europe resemble the waxy potatoe, occasionally met with in England, which is very indigestible, and ought never to be used by those who have weak stomachs. Many persons use potatoes, along with animal food, in preference to bread, and, when not new or waxy, they constitute a very wholesome substitute. They are not considered a suitable article of Diet for invalids, particularly for those affected with indigestion. The form of cookery best adapted for potatoes is, boiling in water containing a considerable quantity of salt in solution; when saturated with the fat of roast meat they are suited only for the strongest stomachs; when mashed they are swallowed without being sufficiently mixed with the saliva, and are, consequently, less easy of digestion; when roasted they sometimes agree best with persons whose digestive organs are weak; but this is not generally the case; and when overdone they are insipid, and deprived, in a great measure, of their nutritious qualities. But, whatever mode of cookery is employed, they should be used as soon as possible after being removed from the fire. The starch of the potatoe closely resembles arrow-root powder, for which it is very frequently sold; this fraud, however, does no harm, for the one starch is little inferior to the other, and their properties are the same. Potatoes are also extensively employed to adulterate bread, and it would be well if nothing worse were used for this purpose.

PULSE, OR LEGUMINOUS SUBSTANCES, constitute the second division of farinaceous aliment. The flour derived from them is highly nutritive, but less digestible than that derived from seeds;

it is flatulent, and if made into cakes lies heavy on the stomach, and is little used even by the lowest classes in this country.

PEAS. Peas, when green and young, are watery, and contain little nourishment; but, when properly dressed, are light and wholesome. When arrived at maturity, and dried, they are used in the form of pudding and in soup; in both ways they are very nutritious, but the former is difficult of digestion, and only suited for the strong labouring classes; the soup, though less objectionable, should be avoided by those troubled with stomach complaints. Peas, when full grown and dry, in whatever manner they may be cooked, are remarkable for their tendency to the production of flatulence.

BEANS. Beans, when young, possess nearly the same properties as peas. The French, or haricot bean, commonly called the kidney bean, is chiefly cultivated in this country for its pod, which is a succulent, tender, and much esteemed vegetable, though not very nutritive. The kidney bean, when ripe and still tender, is more nutritious, but not so easy of digestion: it is a favourite accompaniment of bacon, but this dish is well known to be only calculated for those who have strong digestive powers. The dried kidney beans are more used on the continent of Europe than in this country; Einhof states that they contain eighty-four per cent. of nutritive matter, of which fifty are pure farina, and the rest gluten and mucilage; he therefore considers them to be more nutritive than wheat or any other kind of pulse. They are much more wholesome than peas, and are well suited to correct the effects of fat animal food. They agree well with the labouring classes who are accustomed to their use, and they are very fond of them. "In certain parts of Scotland," says Dr. Cullen, "the farm servants would not engage unless their masters stipulated that they were to receive so much meal of this bean by the day or the week."

CHESTNUTS. Chesnuts are the production of a large and handsome tree (*Castanea vesca*) belonging to the family of the Cupuliferæ; they are composed almost entirely of fecula and sugar, and form one of the principal articles of Diet in many countries. In the plains of Lombardy, in Limousin, among the Cévenne mountains, in Zivarais, and other parts of the south

of France ; in many districts of Spain and Italy, and wherever the tree abounds, chesnuts are extensively used as food by the peasantry, and are considered very wholesome. They are ground into flour, which is made into cakes or pudding, and the nuts are boiled or roasted under the embers or hot ashes. It appears probable that the acorn, so often noticed by ancient writers, was the same as the chesnut. In this country they are toasted and eaten with salt after dinner, and are much liked by most people. If kept for some time after they are gathered, they become sweeter, more mealy, and easier of digestion ; but, notwithstanding, they must be considered as improper for weak stomachs.

ARROW Root. This well known powder, which consists of pure starch, is obtained from the root of a plant called *Maranta Arundinacea*, a native of the West Indies. Boiled in water it forms a mild nutritious jelly, much used as food for children and invalids. It is prepared in the following manner. A portion of the powder, mixed with a little cold water, is to be made into a paste by rubbing it in a basin with a spoon; over this boiling water is to be poured, stirring briskly at the same time; it is then to be boiled for five minutes and sweetened with sugar; a little milk and nutmeg may be added, or a small quantity of Sherry or Madeira wine, according to the state of the patient Port wine does not answer so well because it precipitates the starch. Half an ounce is sufficient to make half a pint of the jelly.

SAGO. Sago is composed of starch, with a little salt and colouring matter; it is derived from the pith of several species of palms; the best is called *pearl sago*, and comes from Malacca. It soon becomes sour if allowed to remain in the form of powder, and is, therefore, made into grains by pressing it through a strong coarse sieve when half baked. Potatoe starch is easily formed into grains in the same manner, and is often fraudulently sold as sago. The usual way of preparing sago is to put a tablespoonful of the grains into a pint of hot water, and allow it to remain at the side of the fire for two hours; it is then to be boiled for a quarter of an hour, stirring diligently during the boiling. Sugar and milk, or wine, may be added to it in the same manner as with the arrow root.

TAPIOCA. Tapioca is the produce of the roots of the *Jatropha*

Manihot, a plant which grows in great abundance in Brazil and in the West Indies. The roots in their raw state are called *cassada*, and are strong poison, yet the starch extracted from them is similar in its nutritive qualities to sago, which it resembles in appearance, but is not so high coloured, and is formed into larger grains; it is prepared in the same manner, only that it does not require to be macerated, or boiled more than half the time.

SALEP, which is obtained from different kinds of the *orchis*, the species of arrow root called *Tous les Mois*, and the vegetable extracts above noticed, are all merely varieties of starch, and do not differ in their properties. They are very generally prescribed as Diet for the sick, and it is not of the slightest consequence which of them is preferred, unless as a matter of taste. They may be either taken simply boiled in water, or with the addition of milk or wine, according to circumstances.

MUCILAGINOUS FOOD. Mucilage is a distinct principle, abounding in different parts of vegetables, but is never found alone in the mucilaginous substances used as food; it is always associated with sugar, or some bitter, acrid, or acid principle, without which it would be indigestible, and almost devoid of nutritive properties. Several of the vegetable substances, usually classed under this head, contain more sugar than mucilage, and in all there is a large quantity of fibrous and colouring matters, which are entirely indigestible; hence the evacuations from the bowels are more copious after this than from any other kind of aliment. The numerous herbs and roots which belong to this class are more valuable in correcting the effects of stimulating animal food than from their own nutritive properties.

The extensive use of salt meat, and the deficiency of vegetables, rendered scurvy, leprosy, and other cutaneous diseases, formerly very prevalent in Great Britain; but now, that our gardens afford such an ample supply of excellent vegetables, those diseases have nearly altogether disappeared.

The liberal use of animal food is no doubt more requisite in England than in other European countries, in order to counteract the effects of the cold and moist climate; but, in general,

we still consume more meat than our habits will authorise, and do not qualify its stimulating tendency by combining it with a sufficient quantity of vegetable aliment; hence, our blood becomes too rich, or not sufficiently assimilated, while the vessels are overcharged, and hence the greater prevalence and severity of inflammatory diseases, the more extensive blood-letting and evacuations which they require, and the more severe fever which injuries occasion.

Mucilaginous food is presented to us under three forms—namely, the leaves or young shoots, the seeds and fruit, and the roots of vegetables.

ESCULENT HERBS. This class includes all the varieties of cabbage and colewort, spinage, lettuce, asparagus, artichoke, &c.

CABBAGE. Red and white cabbage are much relished by many people along with salted meat, bacon, &c., but they have a great tendency to ferment in weak stomachs, and are only suited to those of robust constitutions who take plenty of exercise.

BROCOLI AND CAULIFLOWER. These are much superior to cabbage, being more tender, easier of digestion, and less apt to produce flatulency.

SPINAGE yields very little nutriment, and is, perhaps, the least nutritious of all the vegetable substances used at table; it passes quickly out of the stomach without being digested, and imparts its green colour to the fœces.

SAVOY, and the *common greens or kail*, are similar in their nutritive qualities to spinage, and pass through the alimentary canal in the same rapid manner.

LETTUCE. The lettuce is generally used in the form of salad, and is the most tender and delicate of all the vegetables eaten in a raw state; it is cooling, and has a tendency to induce sleep; but, when employed with this intention, it should not be very young, and must be eaten without vinegar. This, and all kinds of salad and raw vegetables, are rendered more wholesome by an ample accompaniment of the usual condiments; but, in whatever manner taken, they rarely agreed with weak stomachs.

WATER CRESS. From the aromatic principle which the

water cress contains, it stimulates the stomach and promotes the digestion of other raw vegetables, while it obviates the tendency to flatulency, and is, therefore, very useful in salad.

ASPARAGUS. Asparagus is a very wholesome vegetable, and is a particular favourite at table; it is easily digested, and does not create flatulency or acidity, but imparts a strong and peculiar odour to the urine, and with some people acts as a diuretic.

ARTICHOKE. This is a species of thistle, improved in its present magnitude by culture; it was brought to this country from Italy. Artichokes afford a light and tender food, and are similar in their properties to asparagus.

ESCULENT Roots. The principal mucilaginous roots used as food in this country, are the carrot, turnip, Jerusalem artichoke, and the large Spanish or Portuguese onion. All the roots of this description are chiefly composed of mucilage, sugar, indigestible fibrous substance, and essential oil.

CARROT. The carrot was first brought to England by the Flemings, in the reign of Elizabeth. This root in its wild state is hot and acrid; but by cultivation it has been greatly changed, and is now a nutritious and wholesome vegetable. The carrot contains a considerable proportion of sugar, and a much larger quantity of fibrous matter; it is not considered quite so easy of digestion as turnip, and in general acts gently as a laxative. Carrots and turnips should be well boiled and eaten when young. The carrot forms an excellent poultice for foul and ill-conditioned sores.

TURNIP. The turnip was much esteemed as an article of Diet by the ancient Romans; it appears to have been introduced into this country from Hanover, by Lord Townshend, secretary to Charles the First. Turnip is considered one of the best vegetables used at table; but is rather flatulent, and requires seasoning.

BEET ROOT. The red beet is more nutritive than any other root except the potatoe; but it extricates so much gas in the stomach and bowels as to prevent it from being much used as an article of Diet. Beet root contains a large proportion of sugar; 14lbs. yields 1lb. of sugar. A large quantity of the sugar consumed in France is made from this root; and were it not that the French are unwilling to complete the ruin of

their West India colonies, they might, by encouraging the manufacture of sugar from the beet, soon have a sufficient supply from that source alone.

JERUSALEM ARTICHOKE. This is the root of a species of sun flower, which has obtained the name of artichoke from its similarity in flavour to that vegetable. The word Jerusalem is derived from *Gira-sole*, Turn-sun. It is considered a very delicate vegetable; but requires the addition of pepper, salt, or other condiments, to prevent flatulency.

ONION. Onions are more used in this country as seasoning than as food; but they afford a considerable proportion of nourishment. The large onions brought from Spain, Portugal, and Madeira, are the most esteemed; when boiled they are mild, succulent, and seldom disagree with the stomach. The French introduced the use of the *soup a l'oignon*, as a restorative after dancing, sitting up late, or any unusual fatigue; and this practice is now very generally followed in other countries. Sir John Sinclair was of opinion that onions possess more nourishment than perhaps any other vegetable. "It is a well known fact," says the writer, "that a Highlander with a few raw onions in his pocket, and a crust of bread or bit of cake, can work or travel to an almost incredible extent for two or three days together, without any other sort of food whatever."

The **LEEK**, **GARLICK**, and **SHALLOT**, are similar in their qualities to the onion.

CUCUMBERS are well known to be very difficult of digestion, and are the most unwholesome of all raw vegetables. "The digestibility of *celery* is greatly increased by maceration in vinegar."

The stimulating vegetable substances are *horse-radish*, *mustard*, *parsley*, *sauer kraut*, *pickles*, *spices*, &c. These, and all vegetable productions of this description, employed as condiments to aid digestion, should be taken sparingly by invalids. *Horse-radish* is considered the best condiment for the prevention of flatulency.

SACCHARINE OR SWEET FOOD. The amylaceous or starchy principle is a necessary article of food, and is indispensable to our existence; but sugar is not so, and of itself is incapable of supporting life for any considerable time. It is

highly nutritive, however, when sufficiently mixed with a quantity of substantial food. "Sugar," says Dr. Prout, "is the only crystallisable product employed in considerable quantity as an aliment; and by the perfectly healthy stomach seems to be readily assimilated. There are, however, certain states of disease in which this organ appears to lose, in a great measure, the power of assimilating this principle; and in such states of disease, sugar, consequently, is ill-adapted as an aliment. Indeed, on the whole, though sugar, as we have said, is capable of being assimilated in large quantity, it is doubtful if mankind have been the gainers, except in convenience, by employing it in a form in which it is the furthest possible removed from organisation and life." Sugar is found extensively through the vegetable kingdom, but is well known to be most abundant in the sugar-cane, in the grape, and in fruits in general; the roots which possess the most are the beet, carrot, and parsnip.

FIGS, RAISINS, PRUNES, DATES, and other dried fruits contain a large quantity of sugar and mucilage. To many people they are salutary and easy of digestion, to some they prove gently laxative, and are very serviceable in this respect; but from the quantity of sugar contained in them they are very liable to undergo fermentation in the stomach, and to most people are more or less oppressive.

HONEY is very little used as an article of food; it ought never to be taken by the sick and delicate, because it is detained long on the stomach, and frequently causes flatulence and acidity.

ACIDULOUS FOOD. Under this head are placed the different species of fruit used at table. These are in general composed of mucilage, vegetable jelly, sugar, water, malic, acetic and other acids, and some of them contain a portion of farinaceous matter. They afford less nourishment than any other class of aliment, and are considered more as a luxury than as articles of food: when taken as a dessert, unless used very sparingly, they are particularly injurious to invalids, because they interfere with the full meal which has just preceded them; when ripe, and taken at proper times, they are light, refreshing, and very wholesome. In intertropical countries there is always an abundant supply of various kinds of delicious and fragrant fruits, which are both cooling and refreshing, and many of

them containing farinaceous matter, with a considerable proportion of sugar, afford nourishment of a nature well adapted to the indolent inhabitants of warm climates. In fever and inflammatory disorders, with the exception of dysentery, diarrhoea and other affections of the alimentary canal, the juicy and watery fruits, such as grapes, oranges, &c., tend to alleviate thirst; are cooling, and very grateful to the patient. In spitting of blood, and other haemorrhagic complaints, they serve as a valuable, auxiliary to more powerful means in lessening the activity of the circulation, and thus moderating or preventing the return of these discharges. The acid fruits, such as lemons and limes, are well known to be specific in scurvy; and the infusion of tamarinds is a useful remedy in vomiting of blood from the stomach; but in chronic diseases, attended with much debility, no kind of acidulous food should be taken.

It has been remarked, that from certain peculiarities, which we are unable to explain, the stomach is more capricious with respect to fruits than any other article of Diet, and, perhaps, the best guide is to make choice of those for which we have the greatest inclination. The stone fruits are generally considered the least digestible, and the most disposed to fermentation in the stomach; they differ considerably, however, in these respects. Of those in common use, the various kinds of plums are perhaps the most likely to disagree with the stomach and bowels.

The PEACH, APRICOT, and NECTARINE, are the best of the stone fruits, and, when perfectly ripe, seldom disorder the digestive organs; the peach is the most esteemed and the easiest of digestion. CHERRIES, even in large quantities, are not so unwholesome as is generally imagined. In Tuscany, and other parts of Italy, this fruit, during the season with bread, constitute the principal food of the lower orders, and agrees well with them, being much better suited to the system, when heated and excited by the warmth of summer, than much animal food. The STRAWBERRY, RASPBERRY, and GOOSEBERRY, are the most wholesome fruit which this country affords. APPLES and PEARS are the most nutritious of our fruits, but in consequence of their texture being firmer, they require more labour from the stomach, and are, generally speaking, improper for invalids; pears, being the softest, are more easily digested. The great English physician, Syden-

ham, whom we have frequently had occasion to quote, allowed no other aliment to his patients in the febrile stages of small-pox, erysipelas, and quinsy, than *boiled apples*.

The MELON contains more farinaceous matter than any of the preceding ; it should never be eaten after dinner without a plenty of pepper and salt ; and is altogether improper for persons with weak stomachs.

Of the smaller berries, the *cranberry*, *bilberry*, &c., when baked, are very wholesome, and seldom disagree with the stomach. Indeed, many fruits, otherwise unwholesome, are rendered salutary by cooking, and all fruit pies are excellent articles of Diet, if the pastry, which is very indigestible, be rejected. *Currants*, *mulberries*, and the more ascendent fruits, cannot be tolerated by many stomachs.

CONDIMENTS. Condiments are used with our food for the purpose of promoting digestion, and rendering aliments agreeable.

SALT is the chief and most essential of these substances (" *sal sapit omnia*"). It is not only indispensable to man, but appears to be necessary to the lower animals, many of which, in a wild state, seek for it with the greatest avidity. Abstinence from salt soon occasions disorder of the digestive organs, paleness of the countenance, and emaciation ; and unsalted diet almost invariably has the effect of generating worms in the intestines (see page 763). Salt is essentially necessary in rendering insipid food palatable— " Can that which is unsavoury (says Job) be eaten without salt." Bread is rendered more grateful to the palate and easier of digestion by the addition of salt, about twelve to sixteen ounces of which are generally mixed with each bushel of flour. The utility of this accessory to our food cannot be disputed ; but its operation on the animal economy does not appear to be well understood.

VINEGAR, next to salt, is perhaps the next important condiment ; it is very serviceable in aiding the digestion of celery, lettuce, beet root, and other raw vegetables, and in preventing them from inducing flatulence ; it is equally useful in promoting the digestion of rich and oily substances, such as salmon. Lemon-juice has a similar effect when used with goose and wild fowl ; upon the same principle apple sauce is, probably from the malic

acid which it contains, eaten with pork ; and a glass of punch is both palatable and useful after turtle soup.

SPICES AND AROMATICS. The various spices and stimulating vegetable condiments should be used sparingly by invalids ; and are only wholesome for persons in health, when the stomach has to contend with food known to be difficult of digestion. The habit of using them daily injures the tone of the stomach and impairs the digestive functions. In warm climates the stimulating action on the stomach of the different species of pepper and aromatics is more particularly requisite ; and these, when not used in excess, are in general decidedly beneficial (see Cayenne pepper, page 140).

OIL, as we already mentioned, is useful as a seasoning to salad.

DRINKS. The fluids of the body are constantly diminishing, by means of the secretions and excretions ; and their restoration is indicated by the calls of thirst, a sensation which is perfectly analogous to that of hunger, both being intended by nature to express the wants of the system. "Thirst," says Magendie, "is an internal sensation, an instinctive feeling, which belongs essentially to the organisation, and admits of no explanation." But it is not always with the intention of allaying thirst, and repairing the waste which the body sustains in performing its functions, that we introduce liquid into the system. If we made use of drink only to assuage thirst, pure water, which is the proper fluid for this purpose, and liberally provided by nature, would alone be employed. But many fluids are drank which have an additional action on the body, according to the different substances with which they are embued ; these either contain some of the alimentary principles already noticed, united with water ; or they possess a stimulating or nourishing property, derived from these principles by certain chemical changes which have taken place. Their effects upon the system will, of course, depend upon the substance mixed or dissolved in the water.

A certain quantity of fluid is required by the stomach, in order to complete the process of digestion ; and various circumstances increase the demand for drink, such as excessive perspiration, much or violent exercise, eating dry or salted food, &c.

When the sensation of thirst is experienced, whatever may be the more immediate cause through which it has been excited, it will always be proper to have recourse to some kind of drink, but a smaller quantity will be required if we drink slowly, and allow the fluid to spread over all the mouth and back part of the throat. A person in robust health may drink freely of any simple diluent, without suffering inconvenience; but the invalid must be sparing in the use of drink, for much fluid, by diluting the gastric juices, impairs digestion. Drinking freely during meals, particularly the habit of sipping, or moistening the food, prevents the proper admixture of saliva, which, next to the gastric juice, is the most powerful agent in softening the food and converting it into chyle: this error has likewise the effect of allowing the substance to enter the stomach without being sufficiently masticated. We rarely have any desire for drink when the stomach requires food; and when thirst is urgent, there is a strong repugnance to solid aliment; hence, hunger and thirst, as Abernethy observes, appear to be naturally incompatible with each other.

WATER. Water enters abundantly into the solids of the body, and is the basis and largest portion of the fluids; it is, in fact, an essential constituent of all living bodies, and, as it is incessantly being expended during life, the waste must necessarily be supplied, in order to preserve the proper proportion of fluid and solid matter requisite for the due performance of the various functions, and the preservation of health. Water was the first and natural beverage of man and other animals, and, of all simple drinks, is certainly the best adapted to quench thirst, and impart a due degree of solubility to the food in the stomach.

" Nothing like simple element dilutes
The food, or gives the chyle so soon to flow:
But where the stomach, indolent and cold,
Toys with its duty, animate with wine
The insipid stream, though golden Ceres yields
A more voluptuous, a more sprightly draught,
Perhaps more active."

Armstrong.

Saunders, in his book on Mineral Waters, remarks that "Water drinkers are, in general, long livers, are less subject to decay of the faculties, have better teeth, more regular appetites,

and less acrid evacuations than those who indulge in a more stimulating diluent for their common drink." But man lives and thrives when habitually using many different kinds of drink, which the tastes and customs of civilised life have rendered congenial to him; and there is no necessity for restricting ourselves exclusively to water, unless where the use of other beverages is found injurious.

Water should contain as few foreign matters as possible; the difference of its varieties in this respect, according to the sources from which it is obtained, are worthy of some attention.

Rain water is very pure when collected in an open country; but in large towns it is more or less contaminated by the smoky atmosphere through which it falls, and by the impurities lodged on the roofs of the houses from which it drops. When collected from houses it is generally found impregnated with calcareous matter; and should therefore be boiled and strained before it is used.

Spring water is the best adapted for drink when *soft*, that is to say, not impregnated with much earthy salts; but when rendered *hard* by containing saline matter in solution, it is often oppressive to weak stomachs. It even proves injurious to some of the domestic animals when confined to its use; and is particularly disliked by horses. The hardness of water is generally derived from the presence of sulphate of lime (gypsum, or plaster of Paris), five grains of which will impart this quality to a pint of water. Hard water is well known to be unfit for brewing, making tea, washing, and other domestic purposes.

Well water is nearly the same as spring water. The celebrated chemist, Dalton, states, that the more any spring or well is drawn from, the softer the water becomes.

River Water. The water of many rivers at a distance from towns is sufficiently pure for ordinary purposes; but river water frequently contains earthy matter in solution, which renders it unwholesome, and in the vicinity of large cities it is more or less contaminated with animal and vegetable substances, which tend still more to impair its salubrity; rest and filtration are therefore requisite before it can be used with safety. It is very generally believed that the water of the Thames is well adapted for brewing, and that it is preferred by the London porter brewers;

but Dr. Paris states that such water is never used in the London breweries.

Wherever there is suspicion that water possesses any pernicious qualities it should be boiled, and afterwards filtered, if circumstances admit of this process being employed.

TEA. The Chinese from time immemorial have been in the habit of drinking the infusion of the leaves of the tea plant, the cultivation of which is still almost entirely concentrated in their hands; and, indeed, they appear to be the only people acquainted with the proper methods of preparing the leaves for use. The Portuguese, after discovering the route to India, by the Cape of Good Hope, were the first to carry tea into Europe; from Portugal the practice of drinking tea was introduced into England, where it became a fashionable beverage at the court of Charles the Second; and since that time, unimpeded by the conflicting opinions of medical men with regard to its properties, has been perpetually extending throughout Europe, and is now, in this country, considered as an indispensable article of Diet among all classes of society. The consumption of tea in Europe amounts to 50,000,000 lbs. annually, of which 26,700,000 lbs. are used in Great Britain and Ireland; 5,187,000 lbs. in Russia; and only 220,000 lbs. in France.

The more simple the fluid which we take as ordinary drink, the more easily will it be digested, and converted into the component parts of the body; and of all beverages in common use, the infusion of tea is the simplest, and the most innocent; it may not altogether agree with some persons, but, in general, it is salutary and never mischievous, unless when taken in excess, or unreasonably strong. Many medical men of the last century, and some of them of high reputation, among whom are to be included Tissot, Cullen, the great botanist, Linnaeus, and Currie, and even some more obscure authors of the present day, whether from conviction of its injurious tendency, or from caprice, have been very liberal in their censures of this foreign leaf, attributing to its habitual use the increased frequency of indigestion, of low fevers, hysterical, hypochondriacal, paralytic, and other nervous disorders, and also affirming that it has tended to impair the general health, and diminish the strength of those addicted to its use. But nothing that has yet been

written can persuade the public that tea, taken in moderation, is prejudicial to the system, or that it acts otherwise than as a wholesome and refreshing diluent. Sufficient time has now elapsed, and ample testimony has been adduced, since its introduction into England, to establish the correctness of the opinion, which the community at large have all along entertained, respecting the salubrity of this beverage, and certainly no foreign custom has come into general use among us, which has tended more to promote temperance, than drinking tea. The great physician Boerhaave refused to write against tea, and his celebrated cotemporary, Dr. Samuel Johnson, was convinced that his capacity of resisting mental exhaustion was due to the liberal use of this exhilarating beverage; he thus writes in its defence (in the year 1756), in answer to a violent attack made upon it by Mr. Hanway: "That the diseases commonly called nervous, tremors, fits, habitual depressions, and all the maladies which proceed from laxity and debility, are more frequent than in any former time, is, I believe, true, however deplorable. But this new race of evils will not be expelled by the prohibition of tea. This general languor is the effect of general luxury, of general idleness. If it be most to be found among tea-drinkers, the reason is, that tea is one of the stated amusements of the idle and luxurious. The whole mode of life is changed; every kind of voluntary labour, every exercise that strengthened the nerves, and hardened the muscles, is fallen into disuse. The inhabitants are crowded together in populous cities, so that no occasion of life requires much motion; every one is near to all that he wants; and the rich and delicate seldom pass from one street to another, but in carriages of pleasure. Yet we eat and drink, or strive to eat and drink, like the hunters and huntresses, the farmers and the housewives, of the former generation; and they that pass ten hours in bed, and eight at cards, and the greater part of the other six at the table, are taught to impute to tea all diseases which a life, unnatural in all its parts, may chance to bring upon them."

Green tea is more apt to produce wakefulness than black, and should not, therefore, be taken near the time of retiring to rest; but this tendency of tea, even when made strong, is far from being universal. Tea, if used too warm, or in too great quan-

tity, may, like other warm fluids, if taken in excess, tend to debilitate the stomach, and produce indigestion and various nervous symptoms : to these circumstances may be attributed many of the injurious consequences for which the tea itself has been blamed.

Tea should not be taken too soon after dinner, because it would then have the effect of distending the stomach, and impeding digestion ; and in general, it should be drunk with cream or milk, which, to a certain extent, counteract its astringent quality.

COFFEE. Coffee appears to have been known to the Hebrews, and even to the Greeks : from *Æthiopia* and Arabia, to which countries the tree is indigenous, it was first carried to India, and long afterwards to the West Indies and South America. The first public coffee-houses were established at Constantinople in 1553, at Venice 1643. Coffee was first sold publicly in London, by a Greek, named Pasqua, who opened a coffee-house in George-yard, Lombard-street, in 1652 ; and it is now in general use in all civilised countries. Humboldt estimated the quantity of coffee consumed in Europe at nearly one hundred and twenty millions of pounds, of which about a fourth is consumed in France ; but, since this computation was made, the use of coffee in England has greatly increased. Greater hostility was at first manifested against the use of coffee in France than in this country. The witty Madame de Sévigné, comparing it to a poet whom she disliked, says : “ Racine passera comme le café ;” but not a great many years afterwards we find Voltaire, who could not live without this beverage, writing verses in its praise, and turning those into ridicule who considered it injurious. Coffee was the favourite drink of the great Harvey ; Horace Walpole used it constantly ; and at the present day it appears to be indispensable to the greater part of the literary and scientific men throughout Europe.

Coffee, like tea, is a narcotic stimulant, but, when used strong, is much more exciting ; and, if taken late, it likewise produces the effect on many people of keeping off sleep. The custom so universally adopted in France, of taking a cup of strong coffee, without milk, immediately after dinner, appears to

be serviceable in promoting digestion, because the French use the lighter wines, and generally dilute them with water ; but in England, where port wine, sherry, and Madeira, are preferred, this practice is rather injurious than otherwise, and in many persons it causes unnatural vigilance, and some degree of feverish excitement, followed by a disagreeable feeling of exhaustion.

Coffee, when properly prepared, and used in moderation, is an exhilarating, grateful beverage, and the unerring test of experience has confirmed its utility, in every country where it has been introduced into general use. It is well known to be the best corrective of opium, and of the disorders produced by that substance ; it is also very serviceable to many asthmatic people.

CHOCOLATE. Chocolate is made from a nut about the size of a large bean, which grows on the cacao plant (*Keobroma Cacao*), a native of the tropical regions of America. When prepared with milk, or eggs, and sugar, it constitutes a very nourishing drink for breakfast ; but from the quantity of vegetable oil with which it is always combined, does not agree with persons whose digestive organs are weak, nor can it be taken for a continuance, like tea or coffee, even by the robust, without deranging the stomach, and at last exciting a degree of disgust. The best chocolate is prepared in America and the West Indies ; and generally contains some finely powdered cinnamon and vanilla.

Cocoa is prepared from the same seed as the chocolate ; it contains less oil, and is therefore lighter, and often more congenial to the weak stomach.

WINE. Wine is the most agreeable and best of all liquors ; taken in moderation, and at proper times, it imparts vigour both to body and mind, and gives to life an additional charm ; in a medical point of view it is one of the most valuable gifts which Providence has bestowed upon man. But, when immoderately used, wine acts as a slow poison ; it excites the stomach and nervous system, and this effect is followed by a proportionate debility ; a morbid craving for a repetition of the indulgence is created, the faculties of the mind are gradually impaired, and the habit, if persisted in, becomes utterly incompatible with

personal comfort, or the enjoyments of life, while a long train of bodily and mental sufferings is insidiously, though surely, induced.

In early life wine imparts a stimulus to the stomach, which is altogether unnecessary, and has, for the most part, an injurious tendency; but in youth, and even in infancy, there are those who, from delicacy of constitution, especially when associated with a scrofulous habit of body, to whom the support of wine is of essential service. When sparingly and judiciously used, its restorative effects are very beneficial during convalescence from various disorders; and when, from bodily or mental depression, the appetite is impaired, and the digestive powers enfeebled, the exhilarating and stomachic properties of wine are invaluable.

In our damp and variable climate, most people find the necessity of using something more than a simple diluent, and a moderate use of wine can scarcely be considered otherwise than salutary; three or four glasses during or after dinner cannot be said to be injurious to any man in health, who takes sufficient exercise, and perhaps half the quantity may be sufficient for women generally. "We see those who take wine in moderation," says the judicious Dr. Wilson Philip, "live as long, and enjoy as good health, as those who wholly abstain from it; and to some constitutions, independently of the effects of habit, it may be useful." It is always preferable to take a regular quantity daily, than that there should be occasional excesses committed; for inordinate excitement is always followed by corresponding depression, and these effects cannot fail, if the indulgence be frequently repeated, to injure the general health, and lay the foundation of various disorders which must inevitably shorten life.

The comparative value, and the effects which the different wines produce on the system and the stomach, can only be ascertained by trial; there is no rule of general application, and therefore the experience of every individual must determine, not only the particular kind of wine, but also the quantity, which he ought to take.

The acid qualities of wine are injurious to many people; hence sherry, from its dryness, and the comparatively small quantity of acid which it contains, when of a certain age, and of

good quality, will generally be found to agree better with the stomach of the invalid than any other kind of wine;* but to persons affected with indigestion, who, from long continued habit, cannot altogether dispense with the use of some kind of fermented liquor, port wine, if it do not constipate the bowels, will often be found the most beneficial, on account of its astringent and tonic properties. But the principal effects of wine depend upon the quantity of spirits which it contains, and it has been well ascertained that the wines in common use in this country—port, sherry, and Madeira—contain from a fourth to a fifth of their bulk of alcohol, or considerably more than half a pint of pure brandy to each bottle.

ARDENT SPIRITS. If the intemperate use of wine be injurious, the abuse of ardent spirits is infinitely more so. The habitual use of every kind of distilled spirit, besides its pernicious influence on the system generally, causes a slow inflammation of the stomach and liver, which proceeds gradually, but steadily, and often advances beyond the reach of medical aid before it is discovered; but any observations which we might offer on the symptoms and fatal effects of spirit drinking, would be altogether out of place.

Spirits are seldom employed medicinally. A little brandy with water during dinner is sometimes found to assist digestion better than wine; and in some diseases associated with great sinking of the powers of life, brandy or some other spirit may be found necessary to rouse the vital energies; but medical men rarely prescribe ardent spirits, and never without the greatest caution.

MALT LIQUOR. Malt liquor contains less spirit than wine, and affords a much greater proportion of nourishment, while

* Sack, so often mentioned by Shakspere, appears to have been sherry; there can at least be no doubt that it was a Spanish wine, for Dr. Coghan, who lived before the time of our great poet, states, in speaking of the different kinds of wine then used in England, that "Spaine bringeth forth wines of white colour, but much hotter and stronger than those of France, as sack, rumney, and bastard." The name sack is evidently a corruption of the word sec (dry), and the peculiar dryness of sherry is owing, in a great measure, to mixing lime with the grapes, during the process of making this wine. This circumstance tends strongly to confirm the above conjecture, for Falstaff is made to say, "You rogue! here's *lime* in this sack, too. There is nothing but *roguey* to be found in villainous man. Yet a coward is worse than a cup of sack with lime in it—a villainous coward."

the bitter principle derived from the hop imparts tonic properties to it, which are serviceable in assisting digestion. It constitutes a valuable article of Diet to some delicate persons, and is a salutary and strengthening beverage to those who are actively employed. Good *table beer* agrees well with most people; the great physician, Sydenham, whose writings we have frequently had occasion to quote, always used beer at his meals, and considered it a preservative against gravel. The celebrated trainer, Jackson, informed Sir John Sinclair that malt liquor is the drink used by persons in training; home brewed beer is preferred, which should be old and not bottled. "If any person," he says, "accustomed to drink wine, would try malt liquor for a month, he would find himself all the better for it."

Malt liquor, if indulged in to any extent, is improper for full blooded, asthmatic, and bilious persons, and for those of sedentary habits; it is well known to have a tendency to the production of corpulency. The habitual use of ale and porter, without a corresponding degree of exercise, no doubt tends to induce the various diseases which result from a full blooded or plethoric condition of the system; but they are in every respect more wholesome than ardent spirits.

CIDER and PERRY are grateful and refreshing beverages in warm weather, but they seldom agree with persons subject to indigestion, more particularly the latter; and in this respect the *home made wines* are still more objectionable.

SODA WATER is a cooling and agreeable drink during the summer months, but should not be taken during, or immediately after dinner, as the fixed air (carbonic acid gas) which it contains is disengaged, and by distending the stomach, interferes with the process of digestion.

GENERAL REGULATIONS FOR DIET. Having briefly noticed the chief articles of food in common use, we shall now proceed to point out a few precautions to be attended to in regulating the Diet of the invalid, with some observations on the quantity and quality of his food, the regulation of the periods at which the different meals should be taken, and the bodily and mental exercise which ought to follow them.

MEALS. According to the often repeated saying of Diogenes, the best time for eating is, "for a rich man when he can get an

appetite, and for a poor man when he can get food." But we know that habit exercises the greatest influence in regulating the appetite. Persons who are accustomed to breakfasting and dining at certain hours of the day, will always, if in health, feel inclined to eat at those hours, and in many people the desire for food, if not relieved at the usual period, goes off for a time, and indigestion is frequently the consequence. The practice of eating at certain fixed periods is not only necessary, in the present state of society, but is strongly advocated by physicians, as essential to the maintenance of health; and regularity in this respect, besides being in accordance with the proper regulation of domestic economy, allows the food to be entirely digested, and the stomach prepared for a fresh supply, before it is charged with another meal. But the number of meals, and the times at which they should be taken, must depend upon the circumstances connected with each particular case, and must vary according to the age and digestive powers of the individual, the quality of the food, and the extent of exercise taken.

The habit of eating little and often is very properly condemned by all writers on dietetics. By eating frequently we disturb the healthy action of the stomach, and interfere with the natural process of digestion. The stomach follows the general law of the animal economy in requiring rest after labour, and therefore the proper quantity of food should be taken at once, in order that it may be digested, and a few hours of rest allowed before the recurrence of another meal. But this applies only as a general rule; for in many cases of chronic disease, and during convalescence from fever or inflammatory disorders, it would be improper to introduce much food into the stomach at one time; under such circumstances nature requires that we should administer aliment at short intervals, in order to supply the system with sufficient nourishment without oppressing or irritating the digestive organs.

Some individuals complain of a distressing sensation of depression and languor between meals, and consequently seek relief from frequent refreshment; but this habit is always more or less hurtful, and, like many other artificial wants, requires only a little resolution to be overcome; if perseveringly discontinued for some time, the symptoms in which it originated

cease, and the languid and capricious stomach is restored to its healthy tone.

The intervals between meals should not exceed six hours; although such is the power that the system has in accommodating itself to our habits, that many individuals are able to transgress this rule with impunity during many years. The majority of people engaged in business fast daily for nine hours or longer, and then load the stomach with a full meal; this custom, although it may be followed by many without effecting any immediate mischief, tends, in general, to produce indigestion, with the numerous evils which follow in its train, and often paves the way to apoplexy. The old Manchester custom, which even the most affluent of the inhabitants have had the good sense to retain, in spite of fashion, of dining at two o'clock, returning to business, and taking tea at seven, though by many persons it may not be considered so sociable, certainly possesses the advantage of being more salutary than the practice of the same class of people in London, and other large towns, of fasting from nine or ten o'clock in the morning to six or seven in the evening.

Many persons, with weak digestive organs, are so circumstanced that they are under the necessity of taking *luncheon*; but this custom, for the reasons above stated, should, if possible, be avoided, unless by women, who, in consequence of their digestive powers being weaker, eat less at a time, and therefore require to take food oftener than men.

Three meals are generally considered sufficient, and invalids should never indulge in more. Some persons, from long continued habit, are unable to do without supper; but this repast in all cases should be light, and never taken immediately before going to bed.

BREAKFAST. From the length of time that intervenes between breakfast and the previous meal, it might be presumed that a person in the morning would have a greater appetite for food, and would be able to eat more than at any other period of the day. "This, however," says Dr. Paris, one of our best writers on Diet, "is not always the fact; the gastric juice may not be secreted in any quantity during sleep, while the muscular energies of the stomach, although invigorated by repose, are not

immediately called into action; it is, therefore, advisable to allow an interval to pass before we commence the meal of breakfast." But many persons, even those who are not in the habit of taking supper, from a weakened condition of the system, experience an uneasy sensation of languor, accompanied with a feeling of debility and depression, which unfit them for the ordinary duties of life until they have taken some food.

Breakfast being the meal which is to support the body during the most active part of the day, should be sufficiently substantial, but no fixed rule can be given with regard to the quantity of food to be eaten; this, as well as the quality, must depend on the constitution and habits of the person, the exercise to be taken, and the time that is to elapse before dinner. When the dinner hour is late, the morning meal of a person in health should be sufficiently solid to prevent the necessity of having recourse to luncheon, and therefore a moderate quantity of animal food may be indulged in. Liquids are instinctively desired at breakfast to supply the waste by perspiration; for, it has been ascertained that a healthy person, in a given space of time, perspires insensibly twice as much during the night as when awake.

The breakfast of our ancestors was very different from that of the present day. In the time of Queen Elizabeth, when "liver complaints," and the now more fashionable disorder, dyspepsy, were unknown, the breakfast for "my lorde and my lady" consisted of "half a chine of mutton, or ells a chyne of beef boiled;" and the children had "a chickynge, or ells three mutton bonys boiled, with certain quarts of beer and wine." In the Northumberland Household Book for 1512, it is stated that the family rose at six in the morning; my lord and my lady had set at their table for breakfast, at seven o'clock, a quart of beer, a quart of wine, two pieces of salt fish, half a dozen red herrings, and a dish of sprats. They dined at ten, supped at four in the afternoon; the gates were all shut at nine, and no further ingress or egress permitted.

Tea and coffee are now the morning beverages generally used by all classes in this country, and the choice of these must depend on the experience of each individual of what agrees best with him. Persons affected with indigestion, and those with

weak stomachs, are frequently troubled with heartburn, and other uneasy sensations, every time they take much warm fluid along with bread and butter, toast, muffins, or meat, especially if fat. In such cases dry toast should be used, and an egg or two, if found to agree with the stomach, should be substituted for meat. Sometimes it is advisable to take a glass of cold water, or a cup of weak tea, on rising in the morning, and only a small cup of tea at breakfast, in order to avoid mixing much liquid with solid food, a combination which rarely agrees well with the enfeebled or delicate stomach.

Where this weakened condition of the digestive powers exists, new bread, spongy rolls, butter, and the fat of meat, should be carefully avoided; the lean of cold mutton, or eggs with bread a day old, or plain toast, will be more likely to sit easily on the stomach. The adopting of these and similar dietetic measures, according to circumstances, for the purpose of aiding digestion, and restoring the healthy tone of the stomach, is certainly more rational, and more likely to prove successful, than constantly resorting to the use of medicine when the digestive organs are in a deranged condition; a practice which is carried to a greater extent in England than in any other country in Europe.

DINNER. Dinner is the principal meal, and as a general rule should be taken by invalids from four to six hours after breakfast, or about two or three o'clock. In the higher ranks of society the late hour of dinner, and the copiousness of this meal, render it nothing else than a heavy supper; besides the unseasonableness of the hour, the variety of dishes which are devoted to the gratification of the palate, at the expense of the stomach, render it the least wholesome of our meals. There can be no doubt that the stomach more easily digests a mass composed of several ingredients than an equal bulk of any one substance. This fact, as we have already had occasion to mention, likewise applies to the elementary principles of which the different articles of Diet are composed; if only one be taken, in whatever quantity, it affords little nourishment, and is incapable of supporting life for any length of time; whereas, when two or three are combined, the compound substance yields ample nourishment. This fact should not be lost sight of when the stomach is weak; on such occasions the meals should consist of

several articles, but the principle is only applicable within certain limits: the variety of complicated dishes, by which the present system of high cooking pampers the appetite, leads to excess, and, by urging the digestive powers to the utmost extent, repletion, with its many evils, is sure, sooner or later, to ensue.

“ Sated with nature’s boons, what thousands seek,
With dishes tortured from their native taste
And mad variety, to spur beyond
Its wiser will the jaded appetite !
Is this for pleasure ? learn a juster taste,
And know that temperance is true luxury.”

Armstrong.

The working classes, especially in large towns, suffer neither from a variety of dishes, nor from dining at late hours; but their digestion is frequently rendered laborious by eating a full meal hastily, and returning to their work when the process of digestion is hardly commenced. The healthy agricultural labourer may do this with impunity, and the equally robust fox hunter may swallow a breakfast of ham and hard boiled eggs, and then ride a rough trotting horse to cover without suffering any inconvenience. But among the less robust inhabitants of towns repose is necessary after meals; and eating slowly, in order to allow the food to be properly blended with the saliva, is another observance of no less importance.

TEA. To those who dine late tea or coffee do not constitute a meal, and should soon follow dinner, as they are intended merely to quicken the action of the stomach, so that the food, already converted into a soft pulpy fluid (chyle), may be diluted, and thereby aided in passing into the blood, in order to be assimilated into the substance of the body. To persons who dine early it is to be considered more as an essential meal, particularly when not followed by supper; but to those who are in the habit of taking supper, tea should be only a very slight repast.

SUPPER. Among the Romans dinner was regarded as a light refreshment, in the same manner as luncheon is at present by people who dine late, and therefore supper was their principal repast. The renowned Greek physicians, Hippocrates and Galen, for the same reason, were of opinion that supper should be the fullest meal; not that they advocated going to bed with

the stomach in a state of repletion. The supper of the ancients was the meal after the fatigues of the day, and was taken about the same time as dinner is now by those who keep fashionable hours, or even earlier. In the reign of Elizabeth, the nobility dined at eleven o'clock, supped between five and six, and went to bed at ten.

Dr. Coghan observes that,—“ When foure houres bee past after breakfast, a man may safely take his dinner, and the most convenient time for dinner, is aboute eleven of the clock before noone. At Oxford in my time they used commonly at dinner, boyled beefe with pottage, bread and beere and no more. The quantity of beefe was in value an halfpenny for one man, and sometimes of hunger constrained, they would double their commons. About foure houres or six after that we have dined, the time is convenient for supper, which in the universities, is about five of the clock in the afternoon. But in the country abroad they use to sup at six, and in poore men’s houses, when leisure will serve.”

It does not therefore appear to have been the custom, either among our ancestors, or in more remote times, to eat a full meal shortly before the hour of rest. Where persons are accustomed to dine early, and work on task exercise after dinner, a light supper, if taken at least an hour before bedtime, is a necessary meal when the digestive organs are in healthy condition; but to the dyspeptic, or where the digestive powers are feeble, this repast is a fruitful source of night-mare, and of the numerous unpleasant sensations which a stomach, still oppressed with half-digested food, must necessarily give rise to on awaking in the morning.

“ I avoid,” said Mr. Pennant, “ the meal of excess, a supper; and my soul rises with vigour to its employs, and I hope does not disappoint the end of its Creator.”

To literary men, and those whose avocations keep them up to a late hour at night, a piece of dry toast, a biscuit with a soft boiled egg, and a little white wine negus, are generally necessary; and, in fact, many people are unable to sleep without a light repast before retiring to rest.

QUALITY AND CONSISTENCE OF FOOD. The best food is that which is simple, nourishing, and easily digested. Strength is not

derived from the frequent use of strong, concentrated, or stimulating diet, for, though exhilarating and nourishing for a short time, it is soon followed by exhaustion, and, if persisted in, proves injurious to the body. Indeed, the capacity of the digestive organs renders it evident that our meals to be wholesome should be in sufficient bulk: concentrated aliment is quickly digested without sufficiently exercising the stomach, and this, like over working the digestive organs, seldom fails to derange the whole system. Hence the necessity of using plenty of bread along with rich soups, ragouts, and other made dishes; the French are accustomed to use a great deal of bread in order to correct the effects of their concentrated cookery.

We have already observed, in a former part of this essay, that the digestibility of our food is greatly modified by its texture and consistency. The exact degree of density and firmness necessary to render it easy of digestion, varies in different individuals; but we know that, in general, certain substances, such as hard boiled eggs, ham, &c., from their mechanical condition, require a much greater degree of labour from the stomach in reducing them, than others, and are therefore hurtful to persons with weak digestive organs. It has been likewise ascertained that some kinds of food are chemically slower of digestion than others; vegetables remain longer on the stomach than animal food; fat and oily articles of Diet than those that are not so; pork and duck, for example, are less digestible than mutton or beef; and gelatinous and albuminous substances than fribinous.

QUANTITY OF FOOD. No absolute rule can be laid down for people in general, nor even for individuals, with regard to the exact quantity of food necessary for the sustenance of the body. This must of course depend in a great measure upon habit, constitution, difference of sex, age, and manner of life. Authors differ greatly in opinion with regard to the quantity of food necessary for a healthy adult. Dr. Cheyne was of opinion that eight ounces of animal food and twelve ounces of vegetables, constitute a sufficient daily allowance for a studious man. Full Diet in the military hospitals is composed of thirty-six ounces of solid food, and sixty-four of liquid, comprising gruel and beer. Dr. Gregory considers two pounds of bread with three of milk sufficient for a working man; while the Venetian nobleman, Lewis

Cornaro, of whom mention is made by all writers on this subject found twelve ounces of food sufficient for the support of his body; but father Feyjoo, in his rules for preserving health, very significantly asks, Did God create Lewis Cornaro to be a rule to all mankind in what they are to eat and drink? To confine an individual to an exact weight of food is not consistent with reason; the quantity must be accommodated to the exercise taken in the open air, to the particular state of the digestive organs, the climate and season of the year, as well as the quality of the food. The call of appetite is even a fallacious guide, for the stomach, from being so frequently over excited by condiments and stimulating drinks, is often kept as it were in an artificial state, which prevents its cravings from being correct indications of the wants of the general system. But no one possessed of common powers of observation, who chooses to direct his attention to the matter, need be at a loss in knowing the quantity of aliment which he individually requires. Dr. Wilson Philip's observation on this point is worthy of attention. "To eat moderately and slowly," says the judicious physician, "is often of greater consequence than any rule of Diet. The dyspeptic should carefully attend to the first feelings of satiety. There is a moment when the relish given by the appetite ceases: a single mouthful taken after this oppresses the stomach. If he eats slowly, and carefully attends to this feeling, he will never overload the stomach." But in truth it is superfluous to repeat the advice so often given by medical men, not to eat more solid food than is necessary to support the body in a healthy state, for, although half our diseases arise from errors in Diet, yet we seldom commit excesses at table from defect in judgment. Indeed, one may well say with Dr. Beaumont, that, "In the present state of civilised society, with the provocations of the culinary art, and the incentives of highly-seasoned food, brandy, and wines, the temptations to excess in the indulgence of the table are rather too strong to be resisted by poor human nature."

EXERCISE BEFORE AND AFTER TAKING FOOD. We are naturally inclined to rest after eating, and are taught by experience that active bodily exercise immediately after a meal disturbs the process of digestion. Not only do our own feelings convince us of this, but the fact has been made still more apparent by experi-

ments performed on the lower animals. Sir Busick Harwood, having fed two hungry pointers, allowed one of them to rest in his kennel, the other he kept for two hours in constant exercise. On his return both were killed after the same lapse of time. On opening the dog which had remained quiet, the digestion was found nearly completed, but in the other dog the digestive process had scarcely commenced. This, however, applies only to active exertion; healthy persons may take gentle exercise after meals without suffering any inconvenience; their digestion may be slightly impeded in consequence, but will certainly not be prevented. But if the stomach be weak and easily disordered, or a very full meal has been taken, repose is essential to the due performance of the digestive functions: invalids are, therefore, always recommended to amuse themselves with light reading or conversation for an hour or two after dinner. When the digestion is completed, and the chyle has entered into the circulation, we feel invigorated and naturally inclined to bodily exertion: this is the proper time for active exercise, which is then calculated to be of as much service as at an earlier period; when the food is still on the stomach, it would be injurious. But though the benefit to be derived from exercise, either on foot or on horseback, in promoting the appetite and assisting digestion, cannot be called in question, yet the invalid should never forget if it be carried to excess; or if he sit down to dinner without having rested, the functions of digestion are very liable to be deranged.

If eating a full meal, while in a state of bodily fatigue, tend strongly to prevent the digestive organs from properly carrying on their operations, the exhaustion of the nervous energy from long continued mental exertion is not less apt to produce the same effects, nor will the stomach be capable of performing its duty, if the mind be severely exercised immediately after eating. Hence we see that the majority of literary men, and persons intently devoted to business, are among the greatest sufferers from indigestion, and we should always bear in mind that, when this disorder is kept up by thus deviating from the rules, which nature clearly points out as essential to the maintenance of the general health, it frequently gives rise to consumption, or at least, is the first symptom of that fatal malady, as well as of many other formidable disorders.

But we must now draw this article to a close. We fear, indeed, that it has been extended to a greater length than may be deemed consistent with the limits of the present volume; and, that we have said more on the subject than some of our readers may consider necessary; for, however strongly we may inculcate the necessity of self denial, yet, the difficulty of changing long and deeply-rooted habits, is not to be overcome by the mere communication of knowledge, and the most earnest advice will seldom succeed in weaning the *bon vivant* from the gratification of his appetites, or in leading him to forsake the injurious indulgences to which he has been long accustomed. “It would have been of no use (says our excellent old writer, Jeremy Taylor) to talk to Apicius of the secrets of the other world, and of immortality; that the saints and angels eat not! The fat glutton would have stared awhile, and fallen asleep. But if you had discoursed well and knowingly of a lamprey, a large mullet, or a boar, *animal propter convivia natum*, and had sent him a cook from Asia to make new sauces, he would have attended carefully, and taken in your discourses greedily.” In general, people do not err in the manner of living so much from ignorance as from want of self-control. How many excellent works have been published of late years, which have been read and highly approved of by thousands of persons, who, nevertheless, continue to eat and drink twice as much as they ought to do, and of whatever they find most agreeable to their palates. But we would remind those who indulge in the pleasures of the table, that slight excesses constantly repeated will, sooner or later, induce a condition of the digestive organs which must diminish the enjoyments of life, and will ultimately be found utterly incompatible with health and comfort. The sensible part of the community know well that irregularity and intemperance are very prejudicial, and that, on the contrary, a temperate use of food and drink, conjoined with suitable exercise, is not only highly advantageous, but essentially necessary to the maintenance of health, which is the greatest blessing we can possess on earth. “It is health (says one of our old writers*) that makes your bed easy, and your sleep refreshing; that renews your strength with the rising sun; that fills up the hol-

* *Hygiastick Precautions and Rules*, by Dr. Edward Mainwayringe, 1663.

lows and uneven places of your carcase, and makes you plump and comely, and adorns your face with her choicest colours ; that makes your exercise a sport ; that increases the natural endowments of your mind, and makes the soul to take delight in her mansion." We shall now conclude with the excellent advice which the great physician, Galen, gave his readers, nearly seventeen centuries ago, in his work concerning the preservation of health :—" I beseech all persons (he says) who shall read this treatise, not to degrade themselves to a level with the brutes, or the rabble, by gratifying their sloth ; or by eating and drinking promiscuously whatever pleases their palates ; or by indulging their appetites of every kind. But, whether they understand physic or not, let them consult their reason, and observe what agrees, and what disagrees, with them, that, like wise men, they may adhere to the use of such things as conduce to their health, and forbear every thing which, by their own experience, they find to do them hurt ; and let them be assured, that by a diligent observation and practice of this rule, they may enjoy a good share of health, and seldom stand in need of physic or physicians.'

FRACTURES.

Bones, in a healthy state, are nearly insensible, and are capable of acting for any length of time without experiencing either pain or fatigue. They are, nevertheless, like other organised parts, endowed with the attributes of life ; they grow, and are nourished by the same means, and are governed by the same laws, to which other parts of the body are subject. In the healthy state of the system, the blood vessels of each part repair any break of continuity by a substance closely resembling the original structure ; if a wound be inflicted on the skin, it is repaired by the production of a cutaneous substance scarcely to be distinguished from the primitive tissue ; if there be loss of muscular substance or flesh, nature fills up the gap with a substance resembling the muscular structure ; and, in the same manner, the bones, although like all the white coloured structures of the body, they are not so freely supplied with blood vessels and nerves as other parts, yet they secrete an osseous matter for

the formation of a new bond of union. But, although the bones are almost insensible to pain when in a sound state, yet when they are fractured, or their texture destroyed, the sensibility of the broken surfaces becomes roused, and the slightest motion of the fractured extremities is attended with acute suffering; this has the effect of securing repose and quietude, without which the process of recovery would be prevented, and an exact reunion of the broken part could not be accomplished. The irritation produced has also the effect of exciting the healthy action of the nutritive vessels of the part, causing them to pour out the soft substance technically called *callus*, which, when the fractured parts are in an exact state of adaptation, glues them, as it were, together; this union in the course of a few weeks is consolidated, and the limb is again fitted for the performance of its functions. In ordinary cases of Fracture, nature sets up no greater action than is necessary for the reparation of the injury; if the bones be properly set, and kept in their natural position by the judicious use of splints and bandages, the limb being retained in a suitable posture, little or no pain or inflammation will occur. We shall now proceed to notice the methods of treating the Fractures which are of the most frequent occurrence.

The bones are so essential to the movements of the body, and their usefulness depends so much upon the preservation of their shape, that when a fractured bone is badly set and improperly united, the injury inflicted on the individual is a matter of serious importance. But, although simple Fractures may be easily cured by any one possessed of common sense and a gentle hand, yet, from ignorance of a few simple rules, the patient's friends are often unable to afford him any relief, the future usefulness of the limb is impaired, and permanent deformity is but two frequently the result of the injury. In the more complicated cases, where the bones are crushed, and the soft parts bruised and lacerated, or the fractured extremities of the bones protruded through the skin, all the skill of the experienced surgeon is required to restore the injured parts. We shall, therefore, avoid treating on this division of the subject, because we do not conceive that any instructions in a popular form could be made available by the inexperienced. The following hints, however, for the management of simple Fractures may be of service on ship-board, or under

other circumstances in which the aid of the surgeon cannot be obtained.

FRACTURE OF THE THIGH-BONE (*Femur*). The thigh-bone, though very strong, is often fractured. This accident most frequently occurs in consequence of the strain which takes place in falling, especially on the side; it is also occasioned in many cases by direct violence. The bone is generally broken about the middle, or towards the lower extremity; the Fracture is often transverse (plate 1, fig. 1), but more frequently oblique (plate 1, fig. 2).

Fracture of the thigh-bone is accompanied with the following symptoms: the patient experiences severe pain at the moment of the accident, and is unable to move the limb; the foot is turned outwards from the weight of the limb; and the thigh is more or less shortened, according to the degree of obliquity of the Fracture, the lower end of the bone being almost invariably drawn behind the upper one, which remains stationary; thus the ends of the Fracture ride over each other. If the bone be broken directly across, there can be no shortening of the limb, unless the upper end of the Fracture ride over the lower, which rarely happens.

Various methods, and many complicated machines, have been employed in the treatment of this Fracture; but we shall only describe the mode of keeping the surfaces of the broken bone in contact, which is now preferred by the best surgeons. The first thing to be done is to prepare a long splint (plate 2, fig. 1), which may be made of a piece of firm deal-board, of a degree of thickness sufficient to prevent it from being bent, or easily broken. It must be long enough to extend from a little above the false ribs to three or four inches beyond the sole of the foot, and should decline gradually in breadth in proportion as the member naturally diminishes in size, so that the breadth shall correspond to the dimensions of the limb. At the lower end two deep notches (plate 2, fig. 1, *a*) are to be made for the attachment of the bandages, and the upper end is to be perforated by two holes (plate 2, fig. 1, *b*) for the same purpose. The patient having been placed on a smooth and firm bed (a hair mattress is generally preferred), his limb is to be covered with a common bandage or roller, from the toes to near the knee (plate 1, fig. 3); this is done merely to prevent the leg from

swelling, which would otherwise happen from the pressure that must necessarily be made higher up. The operator should now gradually draw out the fractured member (*extension*), while an assistant keeps the upper part of the thigh firmly fixed (*counter-extension*), until the limb is of the same length and direction with the sound one. The long splint, well padded (plate 2, fig. 1, *c*) with proper cushions, in order to prevent the skin from being injured, is then to be applied, and attached to the limb by means of a roller, which is to be passed round both, from above the knee down to the foot, and after having been turned round the ankle is to be passed through the notches, so as to be firmly fastened to the end of the splint (plate 2, fig. 2, *a*); the foot is thus effectually prevented from changing its position. A broad bandage is now to be applied round the lower part of the body, so as to fix the upper extremity of the splint (plate 2, fig. 2, *b*), thence down over the groin, and continued downwards, still involving both the limb and splint, until it reach the bandage first applied. This splint being now firmly attached along the whole length of the limb, we are next to fasten a broad bandage, similar to a riding belt, or like the top band of a pair of buckskin breeches, round the lower part of the waist, in order to bind it to the trunk of the body. The next step consists in passing a handkerchief or shawl over the groin and buttock, and securing its ends through the holes at the top of the splint. By tightening the handkerchief, or whatever bandage may be employed, we of course extend the limb, and this must be done frequently, in order to preserve it of the proper length. It will be advisable to reapply the bandages twice or thrice in the course of the cure, which generally takes place in about six weeks; but the patient must be careful not to rest his whole weight upon the limb till three months have elapsed, because the osseous substance (*callus*), by which the ends of the bones are united, is for a long time tender, and might be readily broken again.* To prevent the skin from being injured, it will

* When this accident occurs a second time the bone unites more readily than at first: in illustration of this the following case is given by Mr. John Bell:—"An officer, whose leg had been reduced by a French surgeon, and who was recovered so as to walk abroad, fell, and broke it a second time, about the fiftieth day of the cure. The limb being reduced and laid again

be necessary to pay particular attention in adjusting the cushions about the ankle and at the groin, where the bandage, which passes up between the thighs, must necessarily cause considerable pressure.

This plan of treating Fracture of the thigh-bone is very simple and easily managed, and the requisite apparatus can be readily procured under any circumstances; it is very efficacious in all cases, but more especially on ship-board, because the long splint is so securely fixed, that it becomes, as it were, a part of the limb, and cannot be displaced during the roughest weather.

FRACTURES OF THE BONES OF THE LEG. Sometimes the shin bone, or *tibia*, is fractured, while the fibula, which is situated behind and towards the outside of the leg, remains entire. When the shin bone is fractured high up, it is generally from direct violence. When it occurs near the protuberance below the knee-pan (plate 2, fig. 3), the injury is readily recognised, particularly if the knee be bent, for then the upper part of the broken bone is thrust forwards. The first thing to be done in this case, is to roll a bandage round the limb from the toes upwards, to prevent the swelling which would otherwise take place from the pressure of the splints (plate 2, fig. 4). We are now to extend the leg, and a splint of wood, hollowed so as to fit the limb, and long enough to reach from the middle of the thigh to near the heel, is to be placed behind (plate 2, fig. 5, *a. a.*), whilst a pasteboard splint is to be applied on each side (plate 2, fig. 5, *b.*); the whole are then to be secured in the usual way by means of a bandage (plate 2, fig. 5, *c.*). If the two side splints are of wood, they should be applied

in splints, was so well ossified in twelve days, that the surgeon took off the splints, and the patient was able to lift his leg; it bore its own weight quite easily, and by the twentieth day it bore the weight of the body; he walked abroad, used all manner of freedom, and was cured a second time, and by the twenty-fourth he was able to walk without any other help than a cane. But this ill-fated leg was destined to be broken a third time; for this gentleman, having mounted his horse in order to go and join his troop, the first step of his journey was a very disastrous one! His horse plunged in among some clay; he fell, and the horse, in kicking to clear himself, broke both the boot and the rider's leg. This third fracture was still more easily reunited than the second, for in less than six weeks he went to his regiment with the leg strong and firmly joined, and so accurately, that it was not easy to distinguish the broken leg from the sound one."

by means of a linen splint-wrapper a yard wide, and of sufficient length to cover the splints ; the wrapper is to be placed underneath, and the splints rolled up in its longitudinal border, until they reach the limb (plate 2, fig. 4) ; if they do not fit properly, we must roll them over again, until they come accurately in contact with the sides of the limb. Wherever two wooden splints are required they may be applied in this manner, which, though a little more troublesome, is decidedly the best. Five bands of tape, or strong linen, two fingers' breadth wide, placed under the lower splint, are now to be brought round and tied at the outer side of the limb (plate 3, fig. 2) ; or a roller may be applied as above directed. Care must be taken to keep the heel sufficiently raised, by placing pads under it. This apparatus, by retaining the limb in the extended position, prevents the knee joint from being moved, and the ends of the broken bone from rubbing against each other.

If the shin-bone be broken lower down (plate 3, fig. 1), the patient loses all power of the limb, and the slightest movement causes great pain, but there is not much deformity. By moving the fingers along the front and sharp edge of the bone, which are only covered by skin, the seat of the Fracture may be easily ascertained ; or if we grasp both ends of the bone, and move them in opposite directions, the displacement of the pieces may be perceived, and we may also distinguish a grating or crepitating noise. The treatment here consists in placing a pasteboard splint on the outside of the leg from a little above the knee to the ankle ; and another on the inside of the same length, cushions having been interposed between the splints and the leg, to prevent the skin from being injured ; the apparatus is then to be secured by five or six flat pieces of tape, which may be easily relaxed or tightened, according to the degree of swelling. The limb is to be placed upon its outer side, with the knee bent upon a pillow. If wooden splints are employed, they should be applied with the wrapper in the manner above described, and oaten chaff cushions or proper pads placed along the limb, to save the skin from the injurious effects of pressure.

When both the bones of the leg are broken together, an accident which frequently happens, they seldom give way opposite to each other ; there may be a distance of several inches between

the Fractures (plate 3, fig. 4). This injury causes the foot to be turned out (plate 3, fig. 3), and the leg to be bent and deformed; indeed, we have no difficulty in ascertaining that both bones are fractured. The eighteen tailed bandage (plate 3, fig. 5), is generally employed in the treatment of this fracture; many surgeons use it in every case of fracture of the extremities. It is made as follows:—To a piece of linen three or four inches wide, according to the size of the limb, and as long as the leg, are to be stiched crosswise eighteen strips of the same width, and in length sufficient to make a turn and a half round the limb, from the knee down to the ankle. They are to be stitched so as to cover each other for about two-thirds of their breadth. The lower ones do not require to be so long as the upper, and they should be attached rather obliquely to the middle piece, so as to allow them to fit properly round the limb. The French surgeons use the many-tailed bandage in preference to this; it differs chiefly in wanting the longitudinal piece. Any number of transverse pieces may be employed, according to the size of the limb; they should overlap each other by about half or two-thirds of their width, and are to be applied in the same manner as the former. The advantage of the many-tailed bandage is, that any part of it, when soiled, may be easily removed, without raising up and disturbing the limb. In setting the bones, the knee is to be slightly bent, and the leg drawn out so as to bring the ends of the bone in contact. The limb having been carefully raised, a splint extending from above the knee to beyond the ankle, covered with a soft pad, and having over this the eighteen-tailed bandage, is to be placed underneath; the leg is then to be gently lowered until it rests upon the apparatus (plate 4, fig. 1). But in raising the limb from the bed, the operator must be careful to keep the upper and lower parts of the bone on the same level, by firmly grasping the limb above and below the fracture, and elevating them together, so that the fractured surfaces may be maintained in apposition. The eighteen-tailed bandage is now to be applied in the following manner (plate 4, fig. 1):—The operator lays hold of the extremity of the lowest band or tail, the opposite one being fixed by an assistant, and passes it obliquely across the leg to the opposite side; he then brings over the end held by the assistant with one hand, while with the other

he retains the first firmly in its place, and applies it in the same manner round the limb so as to intersect the first ; the tails are to be thus applied in succession from the ankle up to the knee. The ends should always be carried underneath the limb. Another pad of tow, or some other soft substance, is next to be applied over the upper part of the limb, and over that another splint of the same length as the first (plate 4, fig. 2). Five or six pieces of flat tape, or strong linen, which ought in the first instance to be placed under the lower splint, are now to be brought round and tied (plate 4, fig. 2), or the apparatus may be secured by means of a *looped bandage* ; this consists of narrow strips of linen or calico, about an inch and a half in width, and of sufficient length, when folded double, to pass a few inches farther than round the limb ; one of the ends is then to be passed through the loop, and tied to the other. The limb should be kept upon the outside with the knee bent, or it may be fixed upon a frame in the form of a double inclined plane, made by nailing the boards together at an obtuse angle, with the addition of a foot board as represented in plate 4, fig. 3. The splints are to be retained for five or six weeks, the time required for the union of the bones varying according to circumstances. After their removal, the limb should be accustomed to its former functions by degrees ; and the patient should be careful not to put much weight upon it for at least two months.

When the fibula, or outer bone, is fractured high up, the symptoms are very obscure ; and unless a careful examination be made early, it will be difficult to ascertain whether the bone be broken or not. The only treatment required, is the application of a roller to prevent motion of the limb ; it should be applied from the toes upwards. In using the common roller or bandage, the end is to be applied a little above the inner ankle, thence the bandage (rolled up) "is carried under the heel and round the ankle once, then passed over the foot close to the roots of the toes, and by two or three turns brought up again to the ankle, over the point of the heel bone, being reversed under each ankle bone, and then turned round the heel in both directions." The roller is now to be carried upwards, and as it advances towards the thick part of the leg must be reversed at every circumvolution, so that the upper edge becomes the lower, and the inner side the outer ; this make the bandage assume what is commonly called

the *herring-bone* appearance. The bandage could not be applied with sufficient firmness and regularity without reversing it in this manner at each turn, because its upper border would compress the thick part of the leg, while the lower one would hang loose.

The lower end of the fibula (plate 4, fig. 4) is sometimes fractured by twisting of the foot outwards, the bone commonly gives way about from one inch and a half to two inches and a half above the outer ankle. The foot being much turned out, while the lower portion of the bone is drawn towards the inner ankle; the pain and the grating of the fractured bones against each other prevent all doubt about the nature of the accident. The mode of treatment now generally adopted is that recommended by the celebrated French surgeon, Baron Dupuytren; it consists in placing at the inner side of the leg a wedge-shaped cushion (plate 4, fig. 5), four or five inches in breadth, and about two-thirds filled with fine chaff; the base, which should be three or four inches in thickness, is to be placed upon the inner ankle bone, without passing beyond it, and the summit should rest upon the inside of the knee. Over this is to be applied a strong splint three inches broad, and long enough to extend from a little beyond the knee, to four inches beyond the heel (plate 4, fig. 5, a.) The splint and pad are now to be confined to the limb by means of a bandage four or five yards in length, which is to be passed round from immediately below the knee to half way down the leg. Another bandage of the same length is to be employed to draw the foot inwards towards the splint; it must be carried round the foot and instep in the form of the figure 8, with the crossing part on the splint, (plate 4, fig. 6); the distortion caused by the weight of the limb and the action of the muscles is thus effectually counteracted. Mr. Liston advises that the splint should be "made to project two inches or two inches and a half beyond the ankle, and to reach near to the knee-joint. It should have two perforations in the upper end; to these a bandage is attached by its split end, and it is then carried down along the inside of the splint (plate 5, fig. 5), and rolled round the foot and ankle; thus the apparatus is prevented from shifting upwards. The other extremity of the bandage, during its convolutions round the foot, is made to pass through notches in the farther end of the splint; the foot is thus turned to the side opposite to

that in which it was placed by the accident, and ought to remain so until consolidation has taken place." The limb should be bent, and allowed to rest on its back upon pillows made to form an inclined plane. When the shin bone is fractured a little above the inner ankle (plate 3, fig. 4), the splint and cushion should be applied on the outside of the limb, and secured in the same manner.

FRACTURE OF THE COLLAR BONE (*Clavicle*). The collar bone cannot be fractured without the patient being aware of the nature of the injury. The Fracture is generally caused by falling from a height, from horseback for example, on the shoulder, less frequently from blows, and is rarely accompanied with wounds. The Fracture generally takes place about the middle of the bone (plate 5, fig. 1, *a.*) and is easily detected, because we can feel the bone along its whole length. The weight of the shoulder and arm makes the outward portion of the broken bone fall downwards and forwards along with the arm; and thus causes the shoulders to seem narrower, while the piece which is attached to the breast bone appears raised without really being so. In order to place the broken ends of the collar bone in contact, both shoulders must be pulled strongly backwards, and kept in that position, by turning a bandage round the shoulders, crossing upon the back in the form of the figure 8 (plate 5, fig. 2); or any other simple contrivance may be employed for the purpose of keeping the shoulders braced back. The figure of 8 bandage is applied in the following manner:—The shoulders being held back by an assistant, the operator fixes the end of the bandage, by making two turns round the upper part of the arm of the affected side; he then carries it backwards to the opposite shoulder, round which he makes a circular to return to the first, and surrounds it in the same manner; he thus passes the bandage alternately round each shoulder until it is finished, and then pins the end or fastens it with a few stitches. The arm being now placed across the chest, with the fingers pointing to the top of the opposite shoulder, is to be supported and fixed in that position by fastening a broad bandage round the arm and chest. Another method, which is equally simple, consists in rolling a firm pad made of soft material in a shawl and placing it in the arm-pit, which it should be large enough to fill. The shawl is then to be

tied over the opposite shoulder, and the ends brought down and secured at the arm-pit of the sound side ; cushions or pads being interposed to prevent the knots from injuring the skin (plate 5, fig. 3, a.) The arm is to be supported and fixed as above directed. No splints or lotions are required, but the part should be examined occasionally, and the bandages adjusted so as to keep the ends of the bone accurately in contact.

In this, as in other cases of Fracture, it may be necessary to draw blood, and to keep the patient on spare diet for a few days.

FRACTURE OF THE RIBS. The ribs are more easily and more frequently fractured than other bones ; but, when the injury is judiciously treated, the consequences are seldom serious. The Fracture unites readily, and the only danger to be dreaded is inflammation of the lining membrane of the chest, called the *pleura*; hence it is absolutely necessary to bleed the patient freely, if his countenance become anxious, his pulse quick and strong, the breathing short and hurried, with other symptoms indicating the approach or commencement of pleurisy (See page 502). When one or more ribs are fractured, the patient feels the broken surfaces grating on each other every time he attempts to take in a full inspiration ; the ribs may also, in most cases, be felt working backwards and forwards under the fingers. This crepitating movement cannot, however, be discovered in every case. The pain is sharp, and augmented by moving the trunk of the body, by coughing, sneezing, or attempting to take in a full breath. When the Fracture is simple there cannot be much displacement, because the broken rib is kept in its direction by the adjacent ribs, which act as splints. All that is necessary to be done for the cure of fractured ribs is, to apply a broad belt or bandage round the chest, to prevent the ribs from being alternately raised and lowered during respiration, and the firmer it is applied the more relief the patient experiences. It is usual to pass a split cloth over the shoulders, which is to be fastened to the circular bandage, to prevent its being displaced. In general it is proper to draw blood from the patient soon after the accident, and to confine him to low diet for a few days, in order to prevent inflammation.

FRACTURE OF THE ARM-BONE (*Humerus*). This is not a very serious accident, and does not require that the patient should be confined. The Fracture is sometimes (plate 6, fig. 1) oblique, but more commonly transverse (plate 5, fig. 4); there is generally considerable displacement of the broken ends of the bone, and more or less shortening of the limb; the latter is sure to occur if the Fracture be oblique; the arm hangs useless by the side, and the slightest movement of the limb causes the broken ends of the bone to grate against each other (*crepitation*); in fact, there can be no mistake about the nature of the accident. There is no difficulty in setting this Fracture. The operator grasps the elbow with one hand, and gently extends the arm, while with the other he straightens the limb, and replaces the bones. To secure the fractured parts in their situation, a splint of strong pasteboard is to be placed along the outside of the arm, from the top of the shoulder to a little way beyond the point of the elbow; and another splint of the same description is to be applied from the arm-pit to the elbow on the inside (plate 6, fig. 2). The splints should be steeped in hot water, in order to make them flexible, and must be padded with flannel, finely carded tow, or some other soft substance, to prevent them from galling the skin. "The conjoined breadth of the splints," says Mr. Liston, "should be sufficient to embrace the limb almost entirely; some space being left, so that when the swelling subsides they may neither meet, and consequently lie loose, nor overlap each other." A long bandage or roller (plate 6, fig. 3), is now to be applied over the whole, commencing from the fingers, and extending it as high as the shoulder; this must not, however, be applied so tight as to interrupt the circulation of the blood in the limb. A wooden splint should be placed on the outside, and another bandage applied; this, however, is only to be retained until the pasteboard splints dry, so as to form a sort of case for the arm. The elbow should be bent at a right angle, and the whole of the fore-arm properly supported in a sling. If the accident happen on ship-board, and no pasteboard can be found, the carpenter can easily make four common flat splints, with which the bone may be very effectually set; one of these is to be placed on the inside, one on the outside, one on the front, and another on the back of the arm; a long

bandage is then to be carefully applied as above directed, in order to keep the splints in their respective situations. On the seventh or eighth day, if the bandages have slackened from the subsidence of the swelling, it must be removed, and one of the splints raised, in order to ascertain that there is no shortening of the limb, nor any displacement of the bones, and again carefully applied as before. If any deformity be observed it may easily be remedied, for the bones do not begin to unite before the seventh day from the date of the accident. In ordinary cases the bone will be firmly united in about a month; but the arm should not be used with much freedom before the expiration of six or seven weeks.

FRACTURES OF THE BONES OF THE FORE-ARM. Of the bones of the fore-arm, the one called the *radius*, which is situated at the outer and anterior part, being almost the only support of the hand, and placed in the same line with the humerus, or arm-bone, is consequently more exposed to Fractures than the other, called the *ulna*, which is situated at the inner side of the fore-arm. Fracture of the radius (plate 7, fig. 1) is an accident of frequent occurrence; sometimes it arises from blows, but more frequently from falling on the palm of the hand; because, when about to fall, we naturally extend the arm, and the hand coming first to the ground, causes the radius to be suddenly pressed between the hand and the humerus; and if the fall be violent it is unable to sustain the shock, and gives way generally about two or three inches from the wrist. There is very little distortion unless the Fracture takes place close to the wrist, and then there is considerable deformity (plate 7, fig. 2). Whether the bone be broken high up towards the bend of the arm, or down near the wrist, the existence of Fracture may be easily ascertained by tracing the bone with the fingers. In all cases the patient experiences difficulty and pain in attempting to turn the arm round; and if we grasp the limb above and below the part where the pain is chiefly felt, and endeavour to move the hand in different directions, a grating noise will be heard, while a sensation is experienced by the patient in consequence of the motion, which convinces him of the nature of the accident.

When the radius is fractured, the ulna, or inner bone, serves

as a splint on one side, while it effectually prevents shortening of the arm, and therefore renders extension unnecessary in setting the Fracture. There is no difficulty in placing the ends of the bone in apposition, and retaining them in their situation. A pasteboard splint (plate 7, fig. 3), which has been softened in hot water, is to be placed upon the outside of the arm, from a little above the elbow, to the tips of the fingers, soft pads of tow or flannel being interposed between it and the arm, in order to prevent the pressure from injuring the skin; a similar splint is to be applied on the inside, from the bend of the arm to the end of the palm of the hand. A long bandage (plate 7, fig. 4), is then to be applied, to retain the splints in their places. The arm is to be placed in a sling, the palm of the hand being turned towards the breast; this position allows the thumb to be even with the line of the broken bone. The patient must take care to keep the hand in this position, and the wrist steady; no attempt should be made to turn the palm up or down, because nothing tends more to displace the bones than the turning motion of the wrist.

The ulna, or inner bone of the fore-arm, is not so often fractured as the radius; and when the accident does occur, it is generally from a blow, or some violence acting directly on the part. This bone is as easily set as the radius, and is kept in its place by means of two splints, with a bandage, as above directed.

Both the bones of the arm are sometimes broken (plate 8, fig. 1); in this case the patient is unable to move the hand; there is much deformity and shortening of the limb, and considerable swelling soon follows the accident. In setting the bones it is necessary to extend the arm until it is of the proper length, the ends of the bones are then to be placed in contact, and two splints, with a bandage, applied, as already directed; but here it is advisable to apply a wooden splint on the outside of the fore-arm, until the pasteboard splints are sufficiently dry and firm; it is then to be taken away. When the patient is thin, it is customary to place a compress of soft linen or lint between the bones, both before and behind, in order to prevent them approaching each other, and growing together. When pasteboard is not at hand, wooden splints may be employed, but the former is always preferable, because it readily takes the shape

of the limb, and, when dry, forms for it a sort of firm mould or case.

FRACTURE OF THE FINGERS. When a finger is fractured the injury is easily recognised. The treatment consists in applying on the front of the finger a narrow wooden splint, padded with tow or lint, which is to be supported by a suitable bandage.

FRACTURE OF THE KNEE-PAN. Sometimes the knee-pan is fractured lengthwise (plate 8, fig. 2), but more frequently across (plate 8, fig. 3). The injury is easily detected when the Fracture is transverse ; in this case the lower portion of the bone remains nearly in its natural situation, while the superior one is drawn upwards upon the fore part of the thigh; the patient cannot support his weight upon the affected limb, and is unable to stretch out the leg. If the Fracture be vertical, we may be able, by carefully handling the knee shortly after the occurrence of the accident, to feel the division of the bone with the fingers. Before setting the bone, the foot and lower part of the limb must be enveloped with a bandage (plate 8, fig. 4), in order to prevent swelling. The leg is to be extended, while the thigh is to be bent, by placing pillows under the whole limb, so as to raise it from the heel to the top of the thigh, and must be kept in this position. The two portions of bone are now to be brought as nearly as possible in contact, and a splint hollowed at both ends, and fitted with a suitable pad, is now to be applied behind the limb (plate 8, fig. 4 *a*) ; it should reach from the bony protuberance at the lower part of the hip, to below the middle of the leg : this is to be secured in its position by a bandage, which must not be applied too tight. In the treatment of a perpendicular Fracture of the knee-pan, which is a rare occurrence, the leg should be kept stretched out, leeches applied, and cold lotions to prevent inflammation. After a few days, when the swelling has subsided, a bandage should be put round the limb to keep the fractured bones together, and they will readily unite in the usual way ; but when the Fracture is transverse, union takes place by a ligamentous substance. The patient should not attempt to walk, nor should the splint be removed until six or eight weeks after the accident.

We shall now conclude this article with the following observations, by one of our best surgical writers, Mr. John Bell, which are deserving of attention :—

"When a limb, the leg for example, is broken, you need no nice and critical diagnostic signs to distinguish the Fracture by; the broken limb yields under the weight of the body, the patient hears and feels the snapping of the bone at first, and is sensible, when the limb is moved, of that grating of the broken ends of the bone against each other, which was in the old vocabulary termed crepitatⁱon; and the surgeon, when he begins to handle the limb, is sensible of the same grating; he perceives by the bending of the limb that it is broken, and there is indeed so little difficulty in distinguishing a Fracture, that I have never seen a patient that was not sensible of his condition, nor heard of a surgeon setting a sound limb, *except by design*. In setting the broken limb, there is no extension required but such as common sense would direct you to use, if you were not a surgeon.

"Next, place your splint along the limb; see on what point it bears, and then see that the splint is covered and soft. Observe, too, that the straight splint cannot lie along the convexity and concavity of the limb; pad up the vacuities betwixt the limb and the splint, so that it bear equally on the whole extent of the limb. Put on your tapes in a proper manner, and at intervals round the splints, and lay the whole upon a pillow. Lastly, look well to the position of the hand or foot, and that neither by the shifting of the body of the patient, nor the gravitation of the extremity, any twist is insensibly taking place in the position of the fractured extremities. It is your duty at all times to preserve the limb steady; but if it be accidentally displaced, or becomes shorter by the action of the muscles, it may be extended again and laid smooth, without fear of hurting the callus. Dismiss, then, those anxieties about the manner of rolling, and the express degree of firmness which the bandages should have; look no longer thus anxiously at the points of the fingers or toes, to see whether the bandage presses properly, so as to make those parts swell; you are not to draw the roller so as to straiten the limb up to the very point of producing gangrene, nor to use any bandages that are formidable from their straitness, nor any that are even firm, except in children, in drunken people, in maniacs, or in those who are delirious with fever or pain."

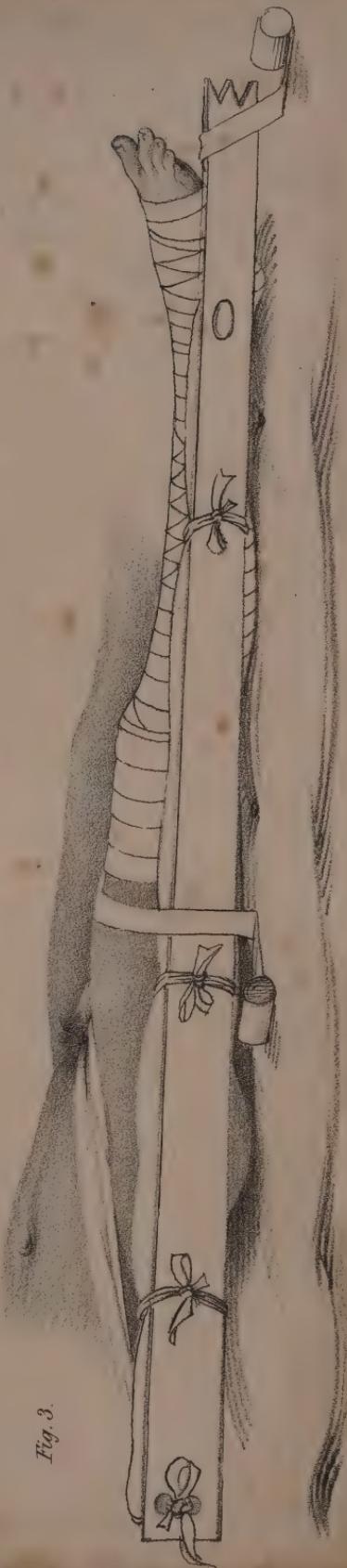
Fig. 1.



Fig. 2.



Fig. 3.



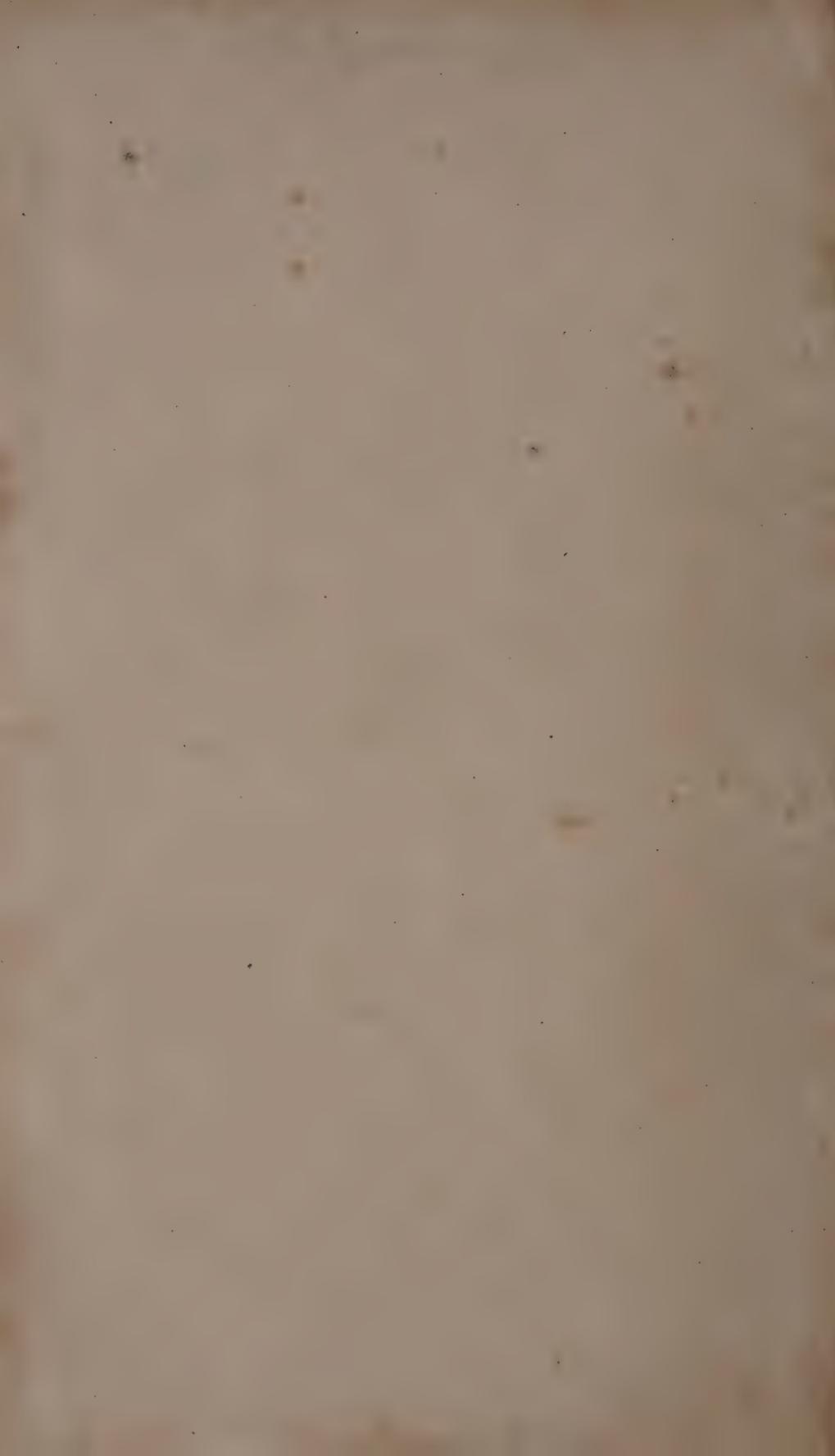
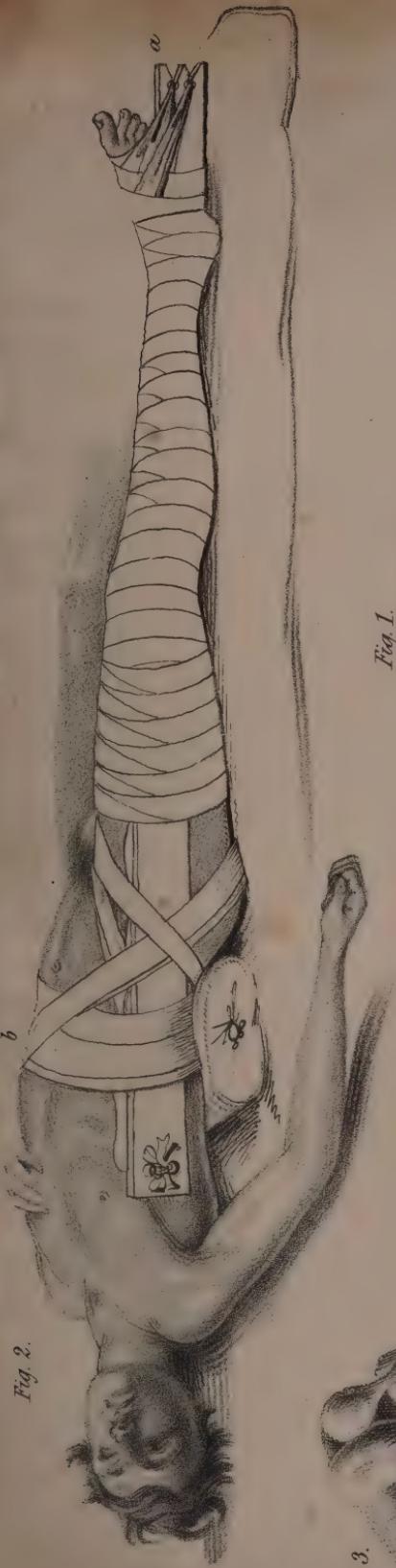


Fig. 2.



*Fig. 1.
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Fig. 3.

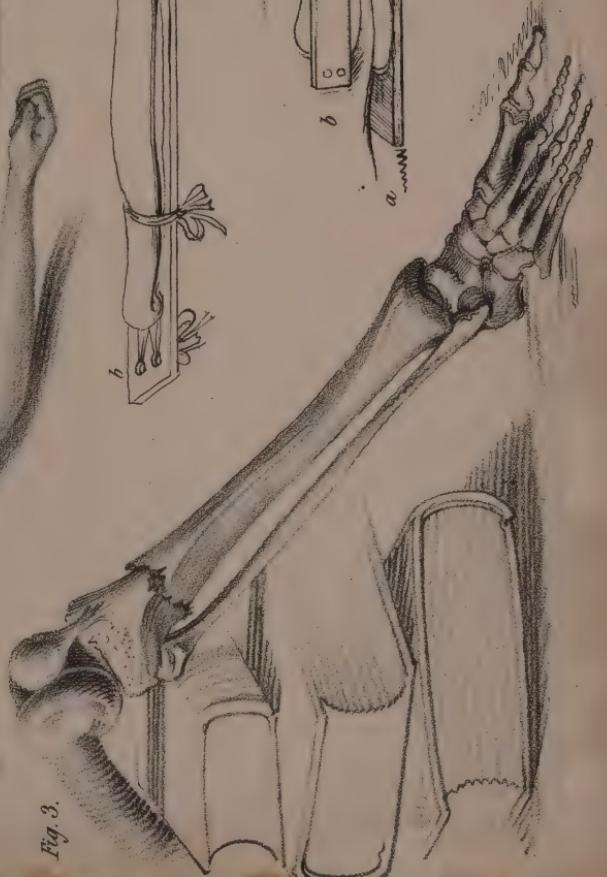


Fig. 5.

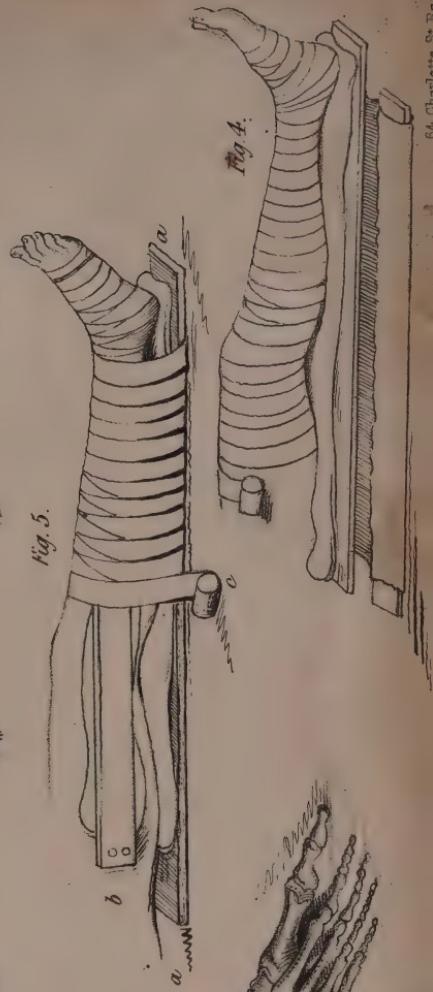


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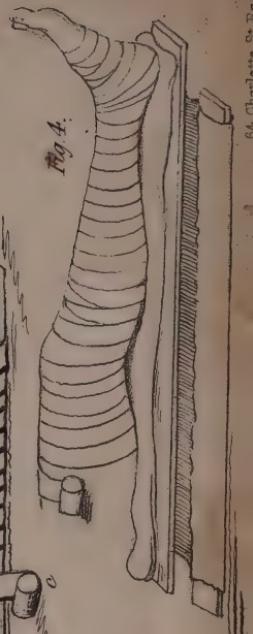




Fig. 3.



Fig. 4.

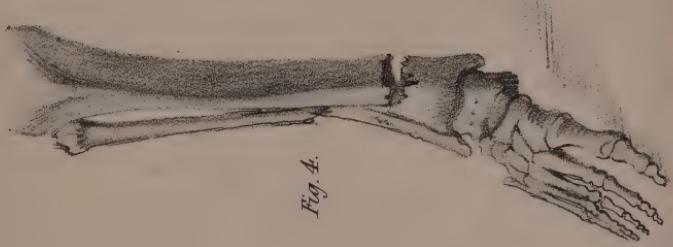


Fig. 1.



Fig. 2.

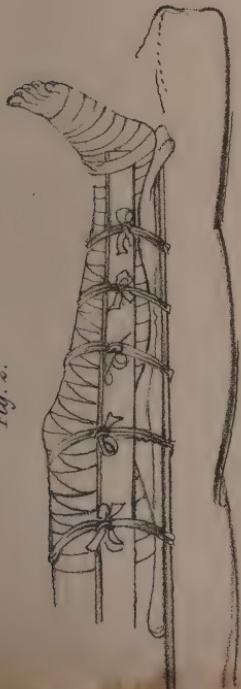
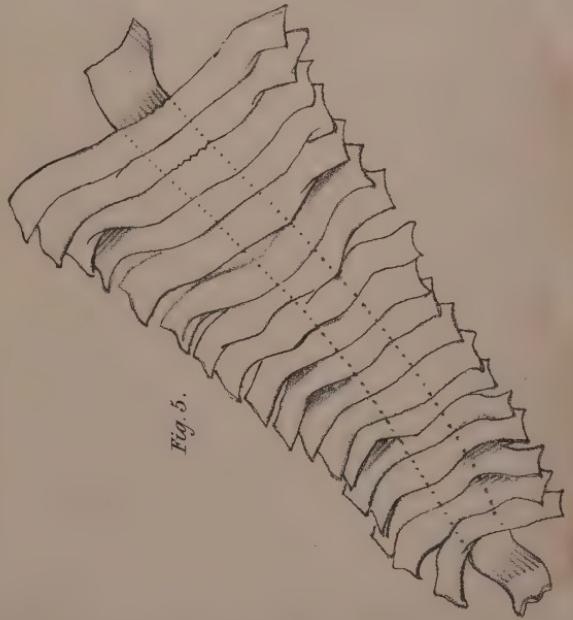


Fig. 5.



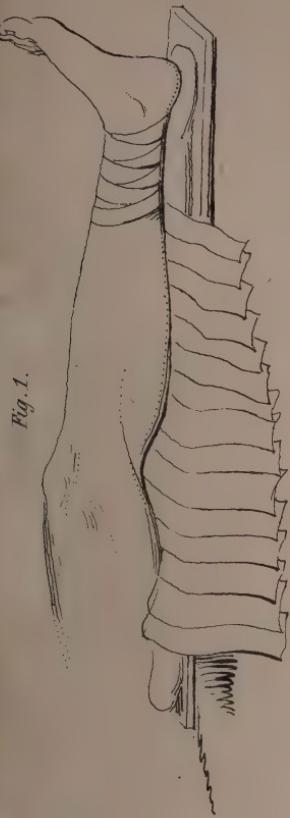


Fig. 1.

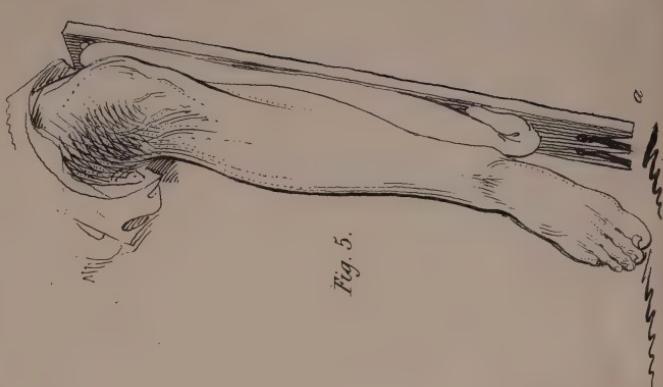


Fig. 5.

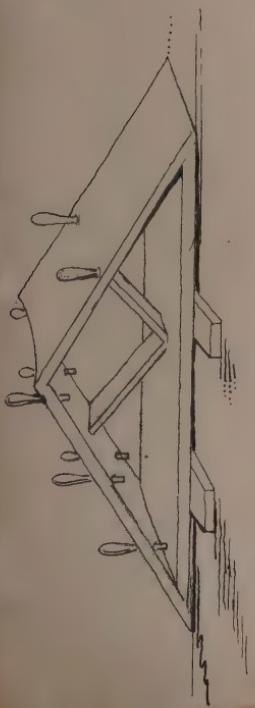


Fig. 3.

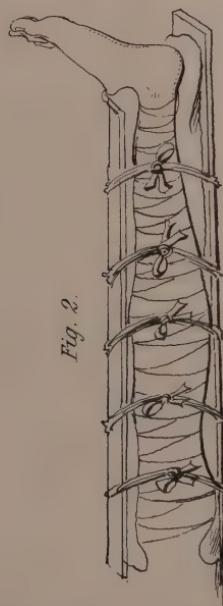


Fig. 2.

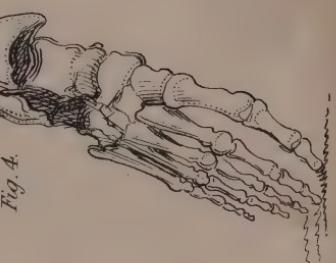


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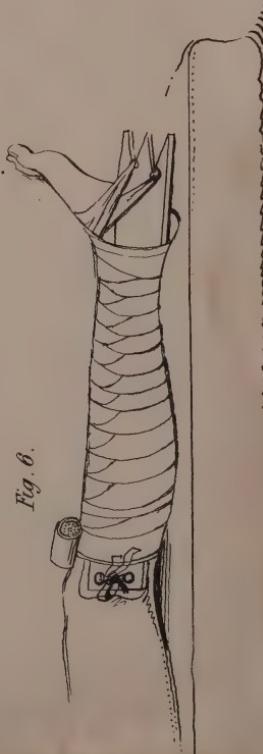


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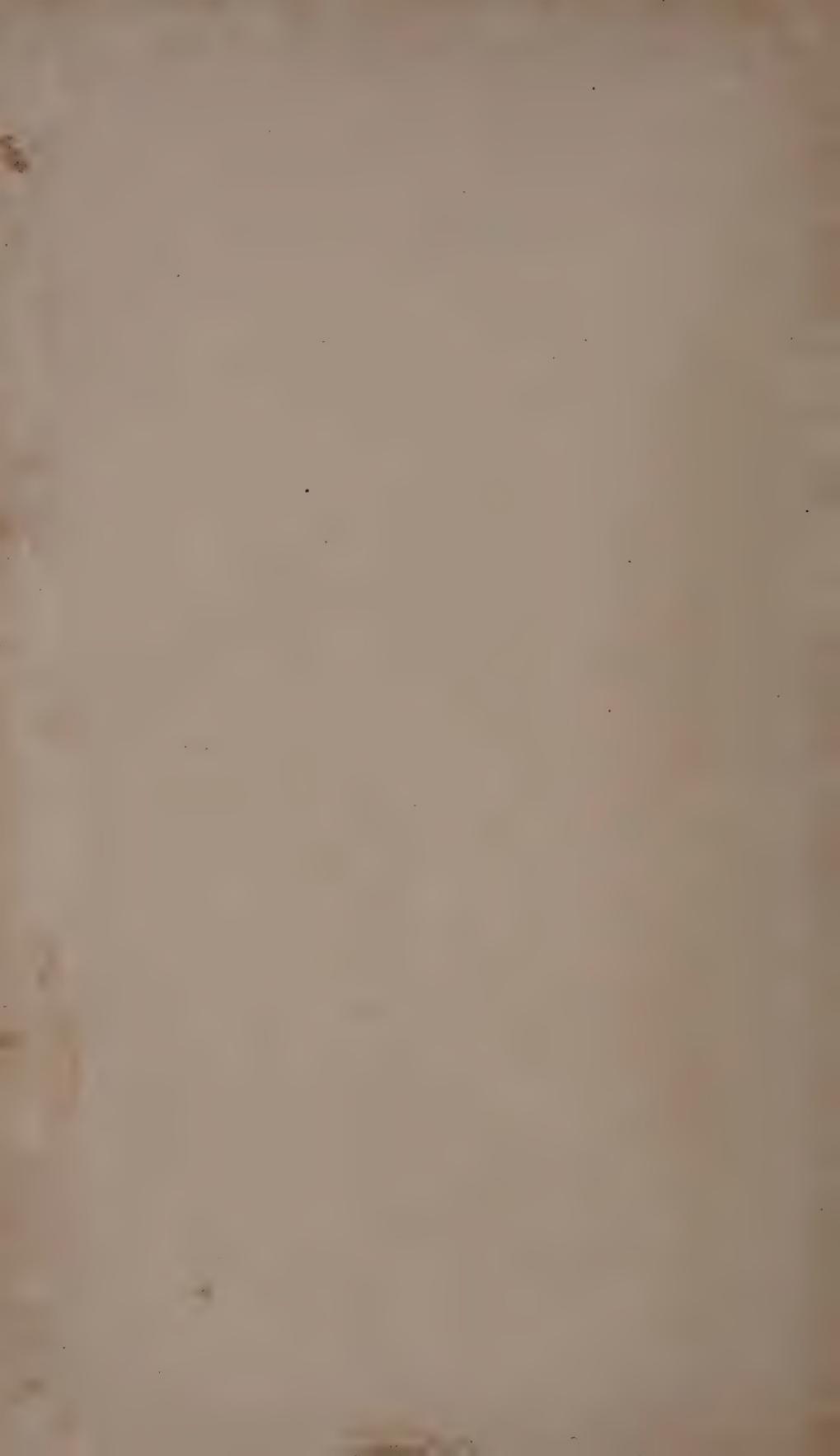


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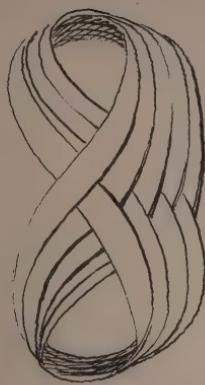


Fig. 3.



Fig. 4.

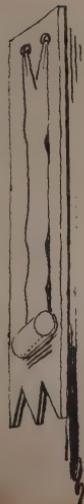
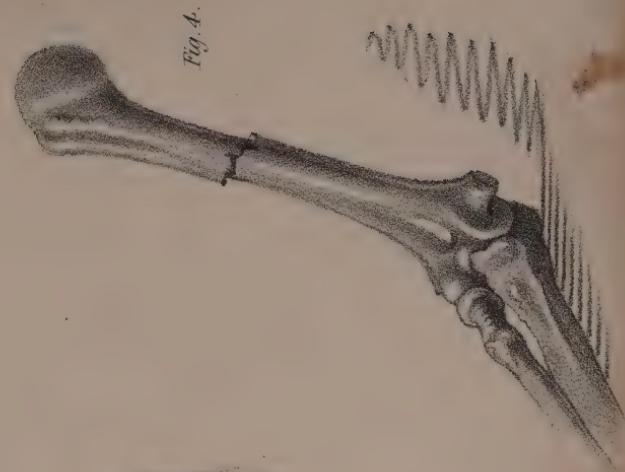


Fig. 5.

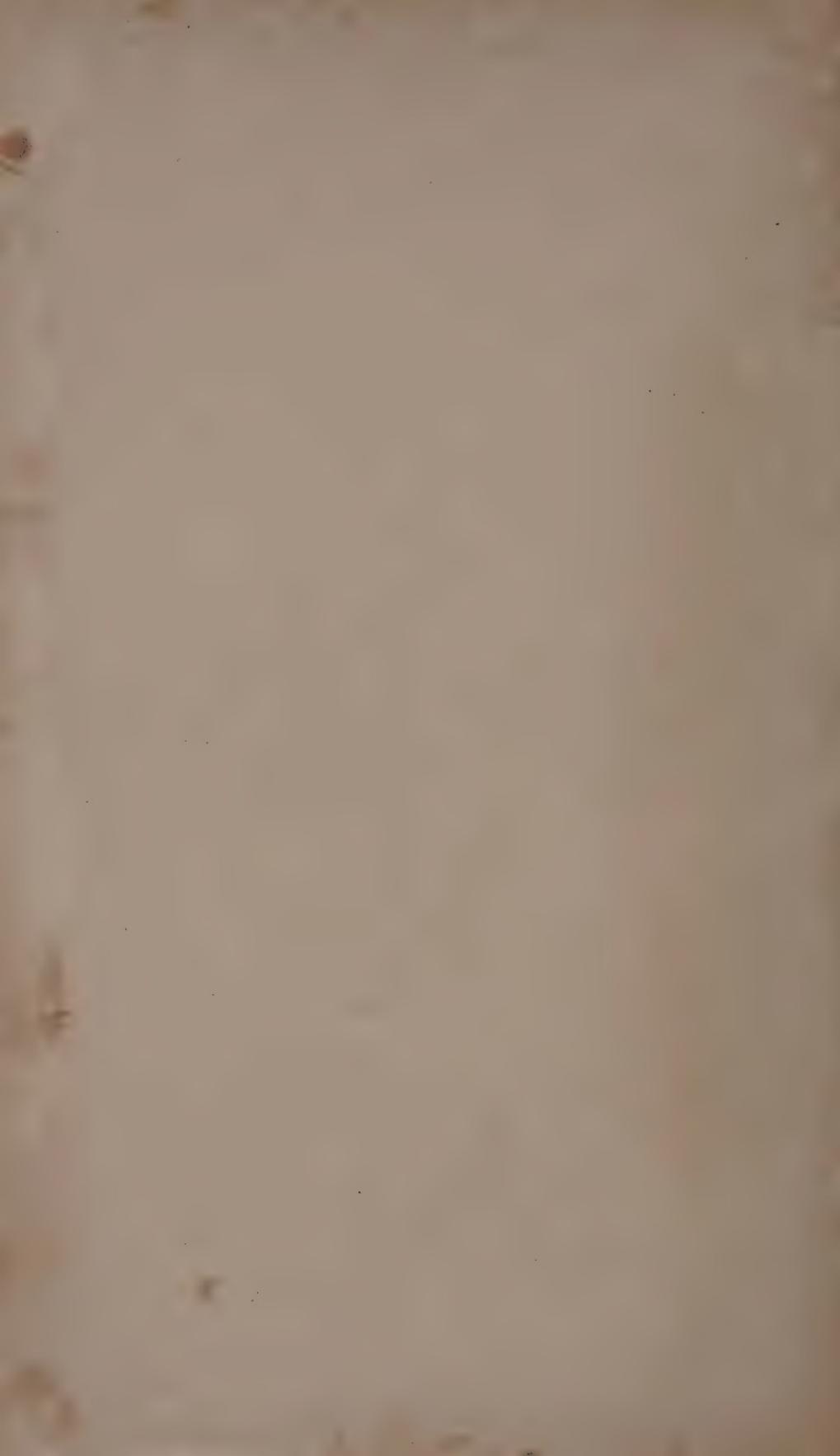




Fig. 1.



Fig. 3.

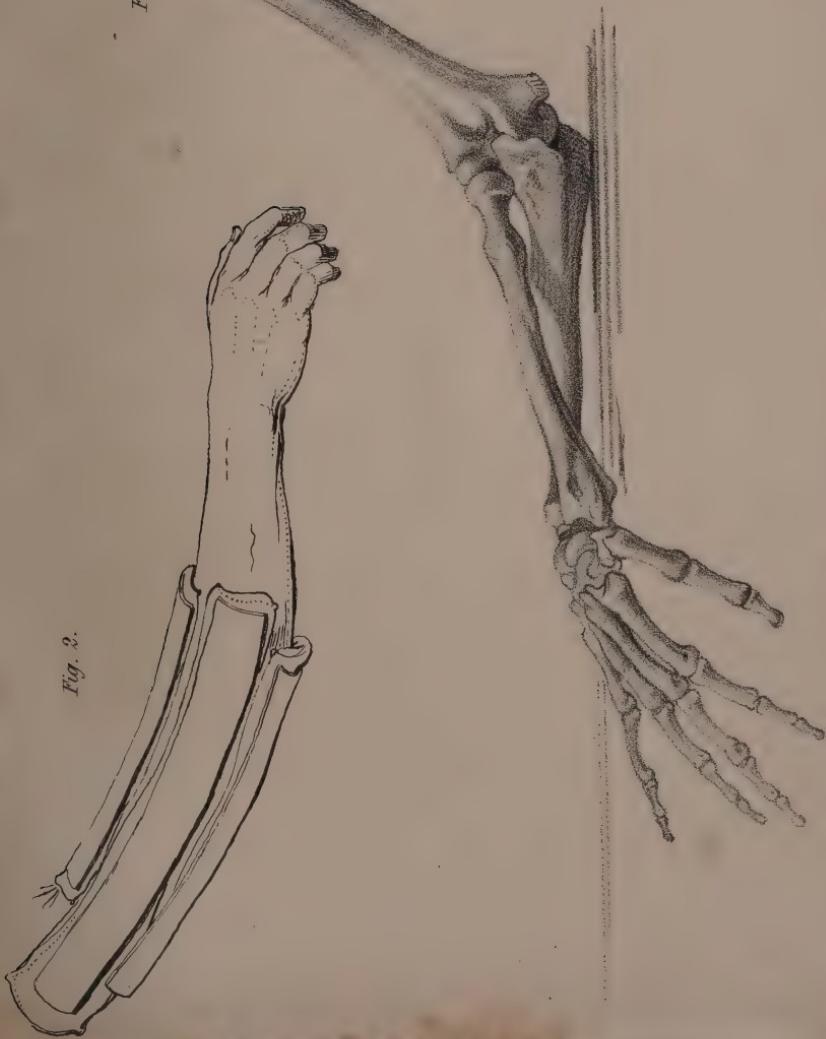


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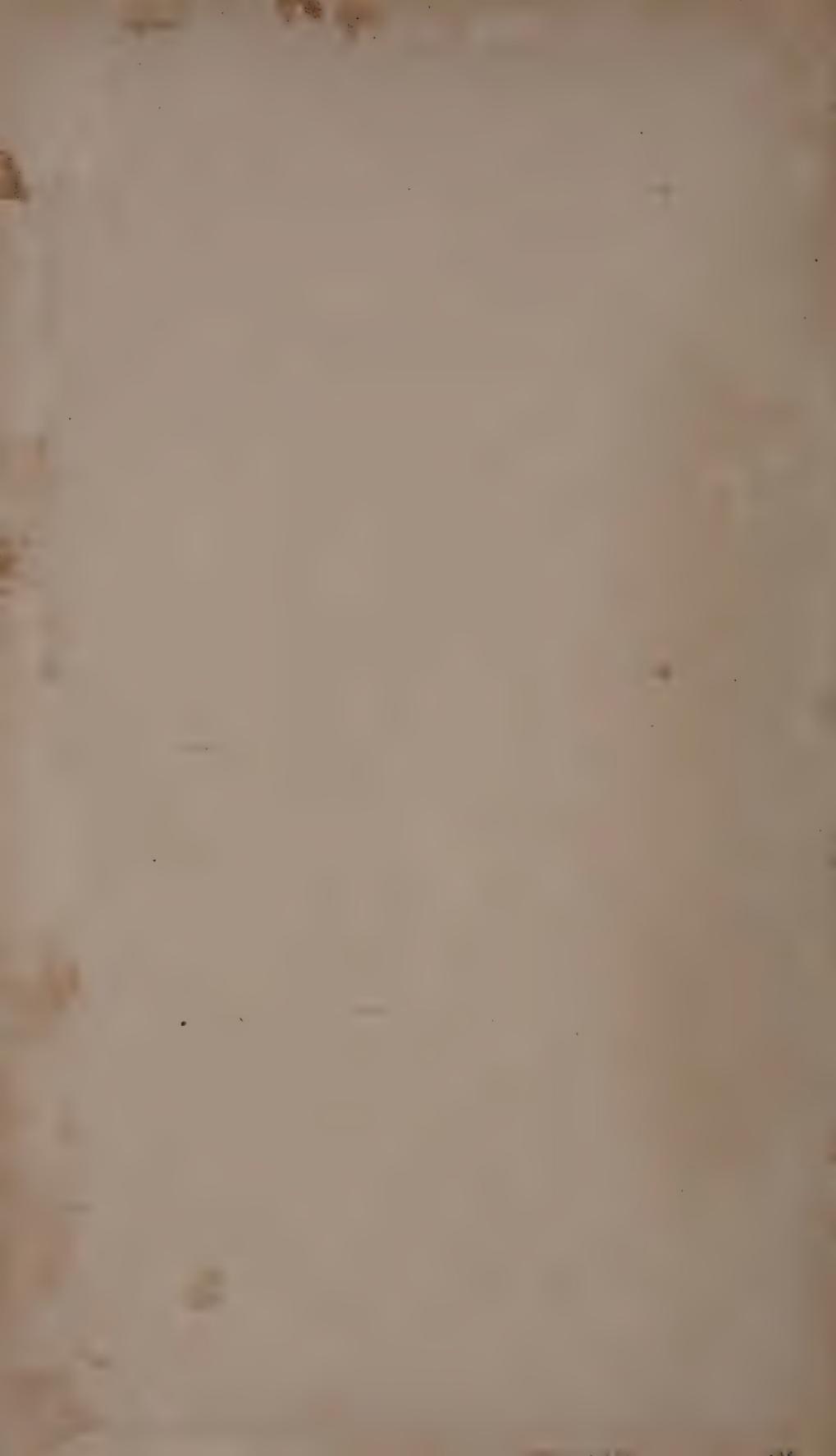


Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

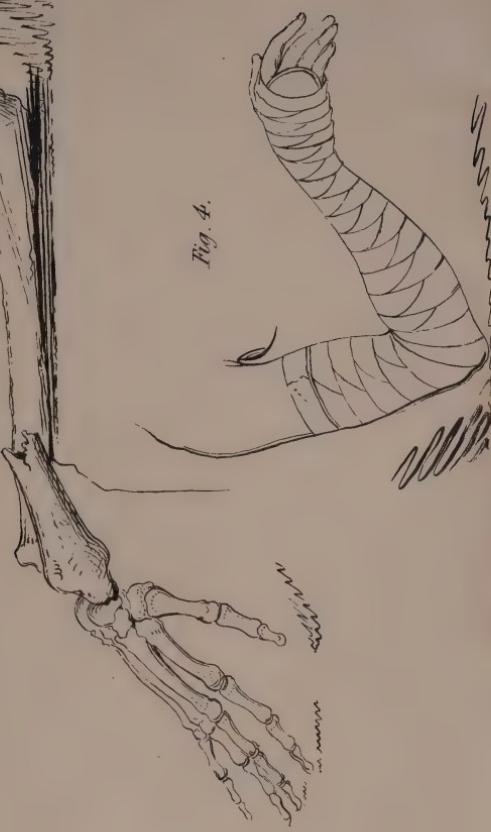




Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.





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ERRATA ET CORRIGENDA.

Article AGUE, page 10, line 39, for "its periodicity," read *periodicity of the disease.*

ASTHMA, page 46, prescription No. 34, for "respiration," read *perspiration.*

BARBIERS, page 48, line 4 from the bottom, for the "pulse weak," read *the pulse is weak*; and line 3 from the bottom, for "hoarse, difficulty," read *hoarse, with difficulty.*

BLEEDING FROM THE NOSE, page 58, line 1, for "but," read *and.*

BRAIN, INFLAMMATION OF, page 76, line 4, for "effusions," read *affusions.*

BRONCHITIS, page 86, prescription No. 63, for "Kerme's," read *Kermes.*

CAMPHOR, page 111, line 19 from the bottom, for "Pharmacopœa," read *Pharmacopœia.*

CANCER, page 125, line 9 from the bottom, for "to its; the disease may," read *to the disease, it may.*

CHOLERA, page 156, line 13, for "in evacuations," read *in the evacuations.*

CITRINE OINTMENT, page 158, line 3, from the end of the article, for "scalded head," read *scald-head.*

COLOCYNTH, page 170, for "purgatives and pills," read *purgative pills.*

DIET, page 787, line 4, for "butcher," read *butcher's*; page 788, line 8, for "tendency," read *tenderness*; page 789, line 10, for "weaken," read *weaker*; page 828, line 20, for "be altogether," read *be here altogether*; page 835, line 13, for "of," read *if*; page 835, line 22, for "on task exercise," read *or take exercise*; page 837, line 19, for "the judicious," read *this judicious*; and page 838, line 23, for "forget if," read *forget that if.*

DROPSY, page 227, line 4 of prescription No. 158, for "croton," read *croton oil.*

GUM AMMONIAC, page 323, line 7 of the article, for "ammonia," read *ammoniac.*

GUM ARABIC, page 323, last line, for "stranguary," read *strangury.*

ITCH, page 405, line 3 from the bottom, for "formulae," read *formula.*

LIME, page 418, line 12 from the bottom, for "Mr.," read *Mrs.*

MENSTRUATION, page 444, line 20, for "tends," read *tend*; page 448, line 30, for "No. 244, and 441," read *No. 247, page 446*; and page 457, line 12 from the bottom, for "increase," read *induce.*

MISCARRIAGE, page 474, line 24, for "or the following," read *or in the following.*

PULMONARY CONSUMPTION, page 530, line 24, for "and," read *are.*

SCARLATINA, page 579, line 18, for "oftener, is," read *oftener, and is.*

Article SCURVY, page 606, line 2, for "the country," read *this country*; and page 609, line 4, for "wel," read *well*.

SPANISH FLIES, page 629, line 8 from the bottom, for "stranguary," read *strangury*.

SPITTING OF BLOOD, page 630, line 18 from the bottom, for "inhaling irritating," read *inhaling of irritating*; page 632, line 6 from the bottom, for "desert," read *dessert*; and page 633, line 7 from the bottom, for "keep," read *cause*.

STOMACH, INFLAMMATION OF, page 637, line 1, for "water, using," read *water or using*.

STONE IN THE BLADDER, page 645, line 9, for "determination," read *termination*; and line 14, for "measure," read *measures*.

STRICTURE OF THE URETHRA, page 655, line 11, for "alternately," read *ultimately*.

TEETHING, page 683, line 11 from the bottom, for "without," read *with*.

TETANUS, page 684, line 10 from the bottom, for "medriff," read *midriff*; and page 685, line 7, for "we had have," read *we have had*.

TIC DOULOUREUX, page 701, line 17, for "root; a," read *root. A*; and page 702, line 25, for "belladonna," read *belladonna*.

TYPHUS FEVER, page 707, line 3 of the note, for "petechiae," read *petechial*; page 708, line 9, for "mucus," read *mucous*; last line of the same page, for "even," read *ever*; and page 718, line 6 from the bottom, for "vivid," read *livid*.

ULCERS, page 725, line 16, for "in a great," read *in great*.

CRITICISM FROM "THE PROVINCIAL MEDICAL AND SURGICAL JOURNAL."

"IT cannot, we imagine, be disputed that circumstances may, and often do, arise under which persons unacquainted, educationally, with the healing heart, are called upon to perform the duties of "the good Samaritan"—to administer medical relief to their suffering fellow creatures, in the absence of regular medical advice. This unavoidable necessity must fully justify, in the mind of every reflecting person, the expediency of popular treatises on medicine, which many are inclined to reject, either from selfish motives or from want of due consideration. We are, furthermore, inclined to look upon works of this kind, if not with favour, at least with indulgence, because we think that, when properly executed, they contribute more effectually to the extinction of quackery than penal enactments or the protestations of the profession. The corner-stone of quackery is ignorance ; and if medicine, deprived of its mysteries, could be brought home to the understandings of the multitude, quackery, like witchcraft, would soon cease to exist. Such an effect the work of Dr. Imray, now before us, is well calculated to produce ; we defy any one, save the most confirmed hypochondriac, who shall read the plain, simple, and accurate descriptions of disease given by Dr. Imray, to fall into the snares of the empiric. Indeed, a studious avoidance of everything which may appear to have the remotest connection with empiricism is one of the leading and not least valuable features in the present Cyclopædia ; which all persons, for whose guidance it is designed, may consult with the most perfect confidence. The descriptions of disease are sufficiently plain to be understood by any layman of moderate intellect ; they are couched in simple language, devoid of technical terms ; the most prominent symptoms are alone dwelt upon, and theories are, as much as possible, carefully avoided ; the rules of treatment are judiciously laid down—the counsels of an experienced and observant physician ; in a word, we would say that the Cyclopædia is an excellent manual of the practice of medicine translated into the vernacular."

